LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

'The Forgotten Man'—McAdoo

Smart money wasn't on Roosevelt at the Democratic national convention in Chicago last week.

And because the Underground Channels of the Press—which we like to tap now and then—were bearing more than one floating rumor that Owen D. Young might be drafted, despite his refusal to be a candidate, we thought it might be a good idea to be on hand just in case . . .

Smart money, however, was wrong. It hadn't counted on William Gibbs McAdoo returning from oblivion to seek revenge. And it had counted on the sincerity of John Nance Garner—who had been one of the most sincere and spotless public officials America has ever known until William Randolph Hearst turned his head with thoughts of the presidency.

Not until the convention was actually in session did very many observers really believe that Garner would sell out for the vice presidency. His future as Speaker of the House could have been much more brilliant than as the nominal president of the Senate.

And he had, in all sincerity, declared he wouldn't accept the vice presidential nomination if it were handed to him on a diamond-studded, platinum platter.

Most startling upset of the convention, however, was not the defection of Garner. It was the resurrection of William Gibbs McAdoo.

In a pre-convention campaign speech, Nominee Roosevelt aroused much discussion with his plea for "the forgotten man" (meaning in general the type of person to whom the electric refrigeration industry is today trying to sell its wares). This "forgotten man" was again forgotten by both parties when they drew up their platforms.

But a real "forgotten man"—McAdoo—emerged from cobwebby obscurity and actually named the candidate.

At Madison Square Garden in New York City eight years ago, McAdoo and Al Smith grappled to an exhausted draw. John W. Davis obligingly took the job of jockeying the weak Democratic nag to a sure also-ran position.

Smith became party leader, the party candidate in 1928, and was still considered party leader in 1932.

McAdoo stepped into a coffin in a deserted graveyard, and closed the lid. Last week he appeared at the Chicago Stadium, physically ghostlike, cadaverous, but with a mysterious smile in his cavernous eyes.

During the first few days he did little but squire about his lovely daughter, Ellen, and drink Mission Orange (which had a monopoly on the soft drink concessions in the stadium) with his fellow delegates from California. (Incidentally, Candidate Melvin Traylor exhibited a pretty daughter, too. Her name was Nancy.)

Friday night McAdoo stepped to the platform and, with considerable animation for an old man who had been buried eight years, released the big California delegation to Roosevelt. In a trice the bandwagon started moving, and delegation after delegation climbed aboard.

Roosevelt was nominated. He was, moreover, completely free from Tammany; and Al Smith, still the most popular man in his party, left town embittered and dethroned. McAdoo had had his revenge.

So our expected story—the offering of the Democratic nomination to the chairman of the board of the General Electric Co.—didn't materialize.

But we did see a grand drama. And because we feel sure you're interested, we're going to tell you something about the stage, glance at some of the character actors, and look around a bit behind the scenes.

* * *

One-Eyed Connolly's Successor

We arrived at the Chicago Stadium Wednesday night about 8:10 By that time some 27,000 persons—a record crowd for the stadium and 4,000 over its capacity—had shown badges or tickets and gained admission Milling around the doors outside were some 15,000 (police estimate) men and women who had read about One-Eyed Connolly, and were trying all sorts of devious tricks to get inside.

Guarding the inner and outer doors were policemen and regular stadium gatemen. You had to have a badge or a ticket. Having failed to file application in advance for a press badge, and not wanting to spend $18 or more for a ticket, we had to use the old bean.

After some experiences we have had getting in to see some of the busy executives of the refrigeration industry, a little thing like a Democratic national convention was duck soup.

Once in, we found many friends, and after that it was easy. We were up on the platform at one time (John W. Davis, himself, had a hard time getting up there when first he tried it) and almost took advantage of a lull to seize a mike and present the names of Louis Ruthenburg and Jeff Johnson to the convention.

* * *

Will Rogers

At the moment when we had almost convinced the last remaining guard that we had genuine business inside, Will Rogers came pounding through. He had forgotten to bring any credentials, but the police squadron parted for him like the Red Sea is said to have done for Moses.

Rogers, incidentally, was the hit of the show. During the all-night session Thursday night, his clowning kept the delegates awake and happy.

Familiar Faces

Members of the refrigeration industry who attended the hearings of the Senate Finance Committee on the manufacturers sales tax would have recognized some of the prominent figures at the convention.

Senator Pat Harrison of Mississippi, a member of the committee, frequented the hot dog stands, conversed affably with small, shifting groups, and coined a possible campaign slogan: "Roosevelt, Ritchie, and Rum."

Two other members of that committee Senator Alben Barkley of Kentucky and Senator Tom Connally of Texas, appeared on the speaker's stand.

Senator Barkley was the keynoter and temporary chairman. During the dusk-to-dawn session Thursday night, he rested the near-octogenarian Chairman Walsh on occasion.

Senator Connally nominated his fellow Texan, John Nance Garner (wonder if the latter is a relative of Frigidaire's Jim Nance?).

Previously in this kolyum the wit, word-marshalling skill, and statesman-like appearance of Senator Connally have been noted. He did himself proud on this occasion. Sample sentence:

"He did not just spring from the common people. He is one of them yet. He can see further West than an easterner, and further East than a westerner, for his thinking embraces the nation."

* * *

Floyd Gibbons Keeps Cool

Only Floyd Gibbons, Edward Thorgarson, and other radio announcers in the N.B.C. and Columbia booths were able to keep cool at the Democratic convention in Chicago last week. The broadcasting booths were equipped with Frigidaire air conditioners. In addition to Gibbons and Thorgarson, the above picture shows William Burke Miller, chief broadcasting technician, and John Ellwood, vice president of the N.B.C.

On the second ballot Oklahoma gave 22 votes to "her beloved son, Will Rogers." Had it been up to the gallery, he would have been elected by acclamation then and there.

He was invited to take the floor once, and was the funniest performer the stadium had housed since Primo Carnera "fought" there. Some of his remarks:

"I'm going to stand here and act the fool until the Democratic party agrees on prohibition. I'll be here from now on. As soon as a quorum of the platform committee sobers up, they'll weasel out a plank."

"I'l bet I'm the only speaker you'll hear who doesn't have his speech written out. Even the ministers are reading their prayers. I guess they can't think fast enough on their feet to impress the Lord that he ought help the Democrats nowadays. I have wired Sister Aimee to come down and see what she can do."

"It is a terrible thing for a comedian to have to get up here and follow what I have to follow. A professional comedian just hasn't got a chance in this league."

"A Democrat never adjourns. He is born, becomes of voting age, and starts right in arguing over something. His first political adjournment is his date with the undertaker."

"Politics is business with the Democrat. He doesn't work at it, but he tells you what he would do if he was working at it."

"The best candidate the Democratic party can nominate you don't hear about. It's Owen D. Young, the most able man in both parties.

"They wouldn't let 'em nominate Calvin Coolidge at the Republican convention, so I am going to try and do it here. He might be a Democrat. Nobody ever did hear him say."

Rogers, you might be interested to know, wraps himself around a hot dog faster than any man we've ever seen.

Swell Sweltering

Outside of the heat and the humidity, the Chicago Stadium was a swell place to enjoy oneself last week. Lots going on.

But the heat was terrific. Only the radio men were comfortable. The N.B.C. and Columbia booths in the hall proper were kept cool by Frigidaire air conditioners (see picture on this page). Broadcasting engineers and operators in the basement enjoyed Carrier "manufactured weather."

The interior of the Chicago Stadium (which is a huge auditorium, and not an outside arena, like most stadia) seemed like the inside of a monster "punkin face," with its bowed out sides, flat bottom, and doming top.

Delegates sat on the main floor (which ordinarily is the scene of basketball and hockey games, prize fights, and the like). Each delegation was marked by a little standard bearing the name of its state on the top—something like a corner street marker.

Rising around the circumference of the floor were three decks of spectators—all howling for beer. The top was festooned with flags, and dotted with floodlights.

Batteries of gigantic spotlights flooded the speaker's stand with plenty of candlepower whenever anybody began to address the delegates, and flashed off again at the conclusion of each speech.

Photographer's flash bulbs (they're a great invention) flickered so frequently that one was reminded of lightning on a summer night.

The new N.B.C. giant microphones were big, white, disc-like affairs which resembled the hats worn by Chinese coolies, or those fancy circular carriage tops used by dandies in the Wasp-Waist Age.

Good Showmen

Next time we see "Cap" Griswold, G. E. distributor down in Dallas, Texas, we're going to ask him if he knows Melvina Passmore.

After Senator Connally had nominated Garner, there came the usual demonstration, hubbub, and parade. Up to the platform bounced this Passmore girl to sing.

She was by all odds the best show of the convention—if we forget Will Rogers for the moment, and when we make that statement we are not forgetting Mrs. Wallace Lanahan of Baltimore, who exhibited (during the Ritchie demonstration) a sunrise-red gown and enough diamonds to have paid the Democratic campaign deficit at the end of the Smith debacle in '28.

Melvina's grand opera reach and marathon duration notes were only a small part of her performance. She was as buoyantly beautiful as a Rubens central figure, and had a smile which would have vanquished any motorbike traffic cop in Detroit.

If there are any more like her in Texas, we're going down there pronto to see how the refrigeration business is prospering in the Lone Star state.

"Alfalfa Bill" Murray, governor of Oklahoma, was also a good show. His voice boomed like a 26-gun salute, and his whiskers rival the pink festoons of J. "Ham" Lewis of Illinois.

Another bewhiskered individual who was much in evidence was "Young Bob" Scripps, editorial director of the Scripps-Howard chain of newspapers.

Al Smith was his usual loveable self (until McAdoo swung the nomination to Roosevelt). After his speech you would have given him anything you had—even your seat in the convention hall.

Governor Ely of Massachusetts, who nominated Smith, delivered one of the smoothest and most compelling orations Democrats have heard since the days of William Jennings Bryan.

Huey "Kingfish" Long, governor, senator, and the Democratic party (he admits it) of and from Louisiana, was another dramatic figure.

Pooh-poohing the legitimate claims of the regularly elected delegation from Louisiana, the red-haired Head Man from Louisiana brought his own delegation to the convention, and succeeded in getting it seated.

A natural "rabble rouser," Long omitted his customary oratorical pyrotechnics and employed logic and sincerity as his tools in forcing his way into the convention.

Two veterans who still look like Presidents should look—Gov. Ritchie of Maryland, and John W. Davis, the 1924 nominee—appeared and spoke.

Ritchie, who resembles Hobart Bosworth, G. E. central station division manager, is still making the same state's-rights speech to which he has been giving utterance for the last decade or so. He needs a new idea.

* * *

Add Tall Tales

Last fall we printed in this kolyum a number of brief recountings of some of the adventures of the noted Paul Bunyan (whose favorite cow measured 46 axe-handles and a can of tomatoes between the horns) as a preface to an Indiana Frigidaire dealer's yarn about the carload of Frigidaires which were derailed into a creek on a summer day and froze it up.

Since that time we have had many requests for more yarns of this nature. So here's a new one:

Two rugged, blustering cowboys got themselves misunderstood by each other and decided to shoot it out, in the grand manner.

Both prided themselves on their marksmanship, and both had plenty of gunstock notches to testify to their skill.

They paced off an even 20 strides, and each lifted a rifle to his right eye, aiming for the left eye of his adversary.

Their shots rang through the desert stillness, but to the astonishment of both, neither fell.

They blinked, loaded their guns again, pulled the trigger and again to their bewilderment neither was touched.

Ten times successively nothing happened. Then it dawned upon them that spooks were doubtless interfering, and they decided the safe thing to do was to call off their feud and smoke the pipe of good will.

"I'm about ready to shake hands," said the first cowboy.

"So'm I," said the second cowboy. 'Here's a mit."

After they had shaken hands one of them chanced to look on the ground.

"Jehosaphat!" he muttered, "look yer, will ye; it's the lead from our guns, and still hot."

And there were the bullets, shot so accurately that they had collided halfway, fallen and melted in midground!

* * *

More Gitem Hot Stuff

And again after repeated urgings on the part of our rabid constituency, we present the second instalment of the Hank-and-Ike correspondence which was originally written for Kelvinator commercial salesmen in Canada:

GITEM HOT & MAKUM KOLD COMPANY
Deheating, Defrosting and Refrigeration Manufacturers
Oskatoosa, N. A.

Dear Boss:

No orders attached. I got bettern orders to report and like all smart execktives I leaves the best till last.

Well here goes—Thursday morning after gettin cleaned up and brekfastin I ses to myself "Time to plan your days work, Hank." I got me a seegar and sot down in one of them leather hotel chares to think. Write wile I was in the middul of this four and five guys starts gathern in the lobby. There was truble, I could tell that cause one of them was not cussin. Seems it was them Rotanis luncheon day and they had no speeker. They ast the hotel boss if he knew of any gests in the hotul wot could dress a meetin. He ses we have two gests Mrs. Pudwumple of the Ladies Church Artillery and Hank Chillum, Ref. Expert.

Well to make a short story long, they choosed me and I septed. In less than 30 minits I finished my 2D. pc. pie and 3d coffe and was on my feet.

Did I talk. Boy I told them a mouthful and tubs full. Those guys knew nuthin bout frigeration and I sure lightened them. I splained our novel misterious and delusive system of coolin.

I took em by storn. They coulden shut me up. I sold our product, factory, president, good-will, yours trooly and all. From now on if theys any frigeration bizness in this town its ourn. They know Im a specialist in this line.

I sure was glad of the chance to do this insted of spendin the whole day sellin one butcher a ice plant and gettin only one measle order—I sold the whole town. Coarse they didn actually sign no order but theyll be good boosters for us for all time to cum. Its a good thing your popular representative was here today.

As the sekatary sed after the meetin, "Boys thats the best thing I herd since Chick Sales Specialist," all of which proves I ken use my head. Hopen you is all pleased at this missionary work, I am,

Yours trooly,
HANK CHILLUM,
Ref. Expert.

P. S. The $4.00 encidentlle is fer a box of seegars wich I bot for the boys.

GITEM HOT & MAKUM KOLD COMPANY AND CORPORATION OF AMERICA
Deheating, Defrosting and Refrigeration Manufacturers
Cold Springs, North America
From the Office of the Head Freezer

Mr. Hank Chillum,
Would Be Salesman,
Oskatoosa, N. A.

Dear Sir:

Yours of this instant at hand. How many times do we have to tell you we want the bizness. Orders is its name—O-R-D-E-R and dont fergit the "S".

Stay rite there in Oskatoosa. Call on every store, butcher, delecatary and best houses and drum up trade. No more speeches—get a order, then a-nother. See what your goodwill bildin will do fer you. If you take our time to make a speech agin I hope you choke.

Here I am the President of this Cumpny. Do I get time fer fancie dinners and speakin. Likell I do, I got to grind 12 hours a day to pay you bums to ride around in tourist coaches and stop at next to best hotuls.

Your not gettin paid to do missionary work. What do you spose my wife pay $2.00 a year to the church for—MISSIONARY WORK—that's the churchs job. What a fine preecher youd make. Get orders.

I hope I have made it clear to you that its slightly against our policy to pay men and expenzes for loafin, eatin and speakin.

If you get kicked outa that town trying to cash your good will let us know where you land as I told our bookkeep dept to charge the $4 seegar money to you commission—but they say that not good collectin contra- such an account and want to mail a bill to you for it.

Your Superior in Cooling and Cold,
IKE OOLUM, President.

No experience to hinder us—Our methods are as new as we are.

* * *

Refrigeration Simile

Cools off faster than a girl's love for a man she discovers is married.

WRITTEN TO BE READ ON ARRIVAL

Merchandising Section

IN TWO PARTS PART ONE

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

VOL. 6, NO. 45, SERIAL NO. 173 ISSUED EVERY WEEK

Copyright, 1932, by Business News Pub. Co.

DETROIT, MICHIGAN, JULY 13, 1932

Entered as second-class matter Aug. 1, 1927, at Detroit, Mich.

THREE DOLLARS PER YEAR TEN CENTS PER COPY

BUREAU OBTAINS 85% OF QUOTA FOR 5 MONTHS

438,181 Units Sold in Period, Figures Show

NEW YORK CITY—Eighty-five per cent of the Electric Refrigeration Bureau's national quota for the first five months of 1932 was achieved, figures released by the N.E.L.A. show. A total of 438,181 household refrigerators were sold during the period, as compared with a quota of 510,050.

Maryland and District of Columbia ranked highest among the states in quota realization for the period, having chalked up 147.6 per cent; following closely were West Virginia, 145.9 per cent; Nevada, 143.5 per cent; Virginia, 142.2 per cent; Delaware, 133 per cent; Missouri, 123.8 per cent; Connecticut, 123.2.

Four other states—Rhode Island, New York, Pennsylvania, and Mississippi—achieved 100 per cent of quota or better for the five months, while Georgia, Minnesota, and New Jersey made more than 90 per cent of their quota figure.

New York state sold far and away the greatest number of refrigerators during the first five months, with a total of 84,037. Second in number sold was

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COLE SALESMEN HOLD 'OLYMPIC' TRYOUTS

NEW YORK CITY—Salesmen in all departments of Rex Cole, Inc., General Electric distributor for metropolitan New York, are now in the midst of their Olympic Games contest, which lasts throughout the month of July.

The period of the contest is designated as the "Olympic Tryouts," during which salesmen will attempt to qualify for the final "Olympic Games" which will be held in the grounds of the New York Athletic Club, Travers Island, N. Y., Aug. 17.

Each department has been assigned a minimum number of its salesmen which may qualify for its team. Selection is made on basis of percentage of sales quota attained. The apartment house division may qualify between 19 and 40 representatives; commercial, between 11 and 20; retail, between 44 and 92; wholesale, between 25 and 54.

As soon as the contest is over and the personnel of each "Olympic Team" is

(Concluded on Page 2, Column 5)

WILLIAMS DEDICATES NEW FIELD FOR BASEBALL NINE

BLOOMINGTON, Ill.—Dedication of a new athletic field for the use of its championship baseball team has been made by Williams Oil-O-Matic Heating Corp., manufacturer of Ice-O-Matic refrigerators.

A crowd of more than 1,500 people attending the dedication was entertained with a concert by the Illinois Soldiers' and Sailors' Children's School Band of 40 pieces.

The game was played against the Purity Ann Hornets, sponsored by the Purity Ann Baking Co. C. U. Williams, president of the Williams organization, threw in the first ball which was caught by A. S. Smith of the baking company. The Williams outfit lost to its opponents by 2 runs.

GIBSON PLANTS HIT PEAK IN PRODUCTION SCHEDULE

GREENVILLE, Mich.—Gibson Refrigerator Corp. plants at both Greenville and Belding will be held to their peak production, according to Charles J. Gibson, president. The plants started on their summer schedules recently.

More than 800 employes will be on the payrolls during the summer. During the past few months 1,200 to 1,600 have been on the day and night crews, but previous to that the high mark employment at the factory had been between 600 and 700, Mr. Gibson said.

Gibson Opens 'Get Your Man' Sales Contest

GREENVILLE, Mich., July 13.—A new "Get Your Man" contest for distributors and distributors' salesmen, and a new 5.4 cu. ft. model to sell at a popular price, are being announced jointly at a series of meetings now being carried on throughout the country by Gibson Electric Refrigerator Corp.

Flying squadrons of Gibson executives are now presenting the news of the new Model SG-54 refrigerator, and mobilizing recruits for the contest, which will take the form of a Royal Canadian Northwest Mounted Police search (for new dealers).

The new model has a gross capacity of 5.4 cu. ft., a shelf and floor area of 9.22 sq. ft., and an ice cube capacity of 63. Overall dimensions are: width, 27⅝; depth, 28⅛; height, 51⅛.

Every man in the distributors' organ-

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Gibson Airplane

GREENVILLE, Mich., July 11.—A special plane chartered by the Gibson Electric Refrigerator Corp. to advertise Gibsons from the skies is accompanying the Fourth Annual Michigan Air Tour which left Detroit yesterday.

Piloted by Jerry Vinemulder, the plane is one of 40 which will take a 1,500-mile trip visiting 17 Michigan cities. Gibson dealers in each city will meet the Gibson plane and escort the pilot to mayors' dinners and other features planned in each town.

From Detroit, the tour started toward Bay City, home of the state commander of the American Legion, which organization is sponsoring the tour. A barbecue dinner at Alpena was the next feature, and after passing over the Strait of Mackinac at St. Ignace and the Soo Locks at Sault Ste. Marie, the tour will stop again at Munising.

Marquette is the next stop, where an airport will be dedicated. Then Ontonagon, a flight over the Porcupine Mountains, and to Houghton-Hancock for an over-night stay. Crystal Falls, then Escanaba, Newberry and Traverse City, where the Cherry Festival is in full swing, come next.

At Houghton Lake the tour members will participate in a State Airport opening, and in Lansing will take part in an air meet. In Battle Creek, last city to be visited, the air tourists will be guests at a Kellogg reception.

Assumes Duties

VANCE C. WOODCOX
Has assumed duties as director of advertising and sales promotion of Kelvinator Corp., Detroit.

Abductors Return Bohn's Son

ST. PAUL—The sum of $12,000 was paid by Gebhard Bohn, president of the Bohn Refrigerator Corp., for the return of his son, Haskell Bohn, from the hands of kidnappers.

Mr. Bohn was ordered, in a special delivery letter received July 5, to place the money in a bag, and follow a designated highway at 30 miles per hour. Upon hearing an automobile horn, he tossed the bag into nearby weeds.

The next night, the 20-year-old youth returned home after nearly a week's absence.

EXTRA! EXTRA! ELECTRIC REFRIGERATION MAN JOINS ICE CO.

ABILENE, Kan.—L. A. Falk has relinquished his duties as state director of the Electric Refrigeration Bureau of Kansas, having resigned from the United Power & Light Co. here to become associated with the People's Ice Co. of Kansas.

Norge Sales Staff Launches 'Extra Power' Drive

DETROIT, July 11.—Today marked the opening of a seven-weeks "Extra Power" contest among the country's Norge electric refrigerator distributors, dealers, and salesmen. At the same time began the Norge $25,000 crossword puzzle and essay contest, designed to bring prospective buyers to dealers' showrooms, which will run concurrently with the "Extra Power" campaign.

The leading salesman from each dealership will be entertained by his distributor at the close of the campaign, when the two leaders in each territory will be awarded prizes and round-trip tickets to the Norge factories in Detroit and Muskegon.

Factory executives will then act as hosts to the group of territory leaders, and will award the nation's highest ranking salesman and the runner-up a

(Concluded on Page 2, Column 2)

QUESTIONNAIRES SENT BY STEWART-WARNER

CHICAGO—"What Would You Like in an Electric Refrigerator?" This question is being asked 15,000 women in 200 cities of the United States through a questionnaire sent out recently by Stewart-Warner Corp. Postage-supplied envelopes were sent with the questionnaire, and returns are already coming in, it is reported.

The questionnaire begins thus: "Men have developed the electric refrigerator. Women use them. Men have gone as far as they can in making them convenient. Now we believe it is time for the women who use them to have their own ideas put into them.

"Whether or not you now use one, won't you give us your ideas of what you would like to see in an electric refrigerator by answering the enclosed questions? By doing so, you will be helping design an electric refrigerator 'built-to-order' for the women of America."

Eighteen questions are asked, as follows:

1. Which of the following color schemes would you now prefer? Plain white; plain white but with some contrasting or harmonizing color decoration on edges, doors, or panels; some other all-over body color besides white (if so, what color); all all-over color but

(Concluded on Page 2, Column 3)

FRIGIDAIRE SENDS 2,250,000th UNIT ON WORLD TOUR

Company Officials See Refrigerator Start Travels

DAYTON—Somewhere beyond Ogden, Utah, the 2,250,000th Frigidaire is rolling westward in a carload of electric refrigerators, bound for San Francisco, Honolulu and points beyond, in a round-the-world cruise.

A dozen company officials were present when the 2,250,000th unit came down Assembly Line No. 2 at the Moraine plant, and was wheeled into the shipping department. They were:

E. G. Biechler, president and general manager; J. J. Nance, sales promotion manager; E. D. Doty, advertising manager; F. R. Pierce, household sales manager; E. R. Godfrey, vice president in charge of production; E. B. Newill, vice president in charge of engineering; D. K. Banker, assistant secretary and resident comptroller; H. W. Newell, vice president in charge of sales; J. J. Pocock, Philadelphia distributor; L. C. Shannon, and Carl A. Copp, general sales manager.

A bronze plaque, bearing the words, "2,250,000th Frigidaire" is affixed to the front of the two-door model.

Gala ceremonies will be held in San

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WESTINGHOUSE 'GLOBE TROTTERS' BEGIN TRIP

MANSFIELD, Ohio—"The Lucky Seven Wonder Tour," a mythical visit to the Seven Wonders of the Ancient World being staged by the Westinghouse Electric & Mfg. Co., for Westinghouse refrigerator salesmen, is now in its second week of activity. This campaign, which started July 7, will continue until Aug. 27, during which time all Westinghouse refrigerator salesmen are "Globe Trotters."

This tour is divided so that each Wonder is 300 leagues apart, and the salesmen receive a specified number of leagues for each sale completed.

According to the number of their sales, the "Globe Trotters" are visiting in the following order: the Colossus of Rhodes, the Great Wall of China, the Phares of Alexandria, the Leaning Tower of Pisa, the Pyramids of Egypt, the Tower of Babel, and finally the Colosseum of Rome.

A special prize will be given the salesman who completes the tour first. But salesmen do not stop when they complete the tour the first time. They are given credit for each time that they make the circuit and they pile up additional leagues, which give them more prizes.

The plan rewards every "Globe Trotter" for each sale made during the

(Concluded on Page 2, Column 1)

$2,600,000 SALES MADE IN WESTINGHOUSE DRIVE

EAST PITTSBURGH, Pa.—A total of $2,600,000 in sales was the result shown in final reports of the volunteer sales campaign of 35,000 employes of the Westinghouse Electric & Mfg. Co., states H. C. Thomas, campaign manager.

Of this total, $1,500,000 was reported for May, and $1,100,000 for June.

While no cash goal was set, the aim of the contest was 35,000 sales—one for each employe. Total sales reported were 54,500, Thomas says, and the volunteers closed 80 per cent of their 68,000 prospects during the 60-day drive.

Figures showed that 127 carloads of refrigerators were sold during the contest; 25 tons of hand-irons were sold.

PEMBLETON JOINS BUREAU EXECUTIVE COMMITTEE

NEWARK—F. D. Pembleton, assistant general sales manager of the Public Service Electric & Gas Co., has accepted appointment as a member of the executive committee of the National Electric Refrigeration Bureau, states James E. Davidson, national chairman.

Bon Voyage To 2,250,000th Frigidaire

Frigidaire Corp. officials welcomed the 2,250,000th Frigidaire from the production line. Left to right, J. J. Nance, E. D. Doty, F. R. Pierce, E. R. Godfrey, vice president, E. B. Newill, vice president, D. K. Banker, H. W. Newell, vice president, E. G. Biechler, president and general manager, J. J. Pocock, Philadelphia distributor, L. C. Shannon, and standing at the rear, Carl A. Copp, general sales manager.

BUREAUS ATTAIN 85% OF 5 MONTHS' QUOTA

(Concluded from Page 1, Column 1)

Pennsylvania with 45,870, and third, Illinois, with 31,240.

The state of Washington ranked lowest in percentage of quota reached, having sold only 35 per cent of the figure set by the Electric Refrigeration Bureau.

Figures are as follows:

	N.E.L.A. Quota First 5 Months	Estimated Total Sales	% Quota Realization
New England			
Connecticut	8,612	10,613	123.2
Maine	3,838	2,856	74.4
Massachusetts	25,932	21,268	82.0
New Hampshire	2,659	1,594	59.9
Rhode Island	4,090	5,000	122.2
Vermont	1,602	1,220	76.2
Eastern			
Delaware	926	1,232	133.0
Maryland & D. C.	9,656	14,253	147.6
New Jersey	24,279	22,109	91.1
New York	78,504	84,037	107.0
Pennsylvania	44,708	45,870	102.6
East Central			
Kentucky	5,903	4,867	82.4
Ohio	32,703	22,623	69.2
West Virginia	3,866	5,641	145.9
Middle West			
Iowa	9,555	6,455	67.6
Kansas	7,340	5,355	73.0
Missouri	14,000	17,336	123.8
Nebraska	5,263	4,148	78.8
Pacific Coast			
Arizona	1,392	868	62.4
California	37,428	22,108	59.1
Nevada	375	538	143.5
North Western			
Idaho	1,228	899	73.2
Montana	1,667	1,161	69.6
Oregon	4,725	2,883	61.0
Utah	2,151	1,922	89.4
Washington	8,628	3,020	35.0
South Eastern			
Alabama	3,879	2,753	71.0
Florida	4,813	3,166	65.8
Georgia	4,082	3,786	92.7
North Carolina	5,023	3,920	78.0
South Carolina	2,022	1,838	72.9
Tennessee	5,025	4,464	88.8
Virginia	5,638	8,019	142.2
Great Lakes			
Illinois	39,313	31,240	79.5
Indiana	14,900	8,063	54.1
Michigan	23,761	15,522	65.3
Wisconsin	13,521	6,199	45.8
North Central			
Minnesota	10,074	9,114	90.5
North Dakota	1,230	941	73.5
South Dakota	1,690	890	52.7
Rocky Mountain			
Colorado	4,104	3,641	88.7
New Mexico	687	529	77.0
Wyoming	718	409	57.0
South Western			
Arkansas	2,382	1,914	80.4
Louisiana	3,921	2,720	69.4
Mississippi	2,150	1,105	51.4
Oklahoma	5,646	6,003	106.3
Texas	13,891	12,069	86.9
Totals	510,050	438,181	85.9

'GLOBE TROTTERS' START WESTINGHOUSE CONTEST

(Concluded from Page 1, Column 5)

tour. In addition there are to be prizes offered in each district, including two "Chests of Gold," by the district officials for the salesmen who travel the greatest number of leagues.

Dealers have been sent large, colorful reproductions of the "Lucky Seven Wonder Tour" chart which are to be hung in their sales and meeting rooms. By this means the district or local salesmen can tell how far they have traveled and can note their progress.

Novelty pieces, such as "Lucky Pocket Pieces," the Gordian Knot, the Leaning Tower of Pisa, and other attractive novelties, have been sent the salesmen to keep them constantly reminded of the tour.

The directing personnel, which will guide the tourists on their way to see the Seven Ancient Wonders, includes R. C. Cosgrove, manager of the refrigeration division, general tour director; Westinghouse field supervisors, official tour captains; Westinghouse sales promotion managers, official guides.

Distributors, tour group; wholesale salesmen, travel agents; contest manager, advance travel agent; dealer organization, tour party; dealer supervisors, globe trotter guides, and dealer salesmen, globe trotters. The Mansfield office has been designated as tour headquarters.

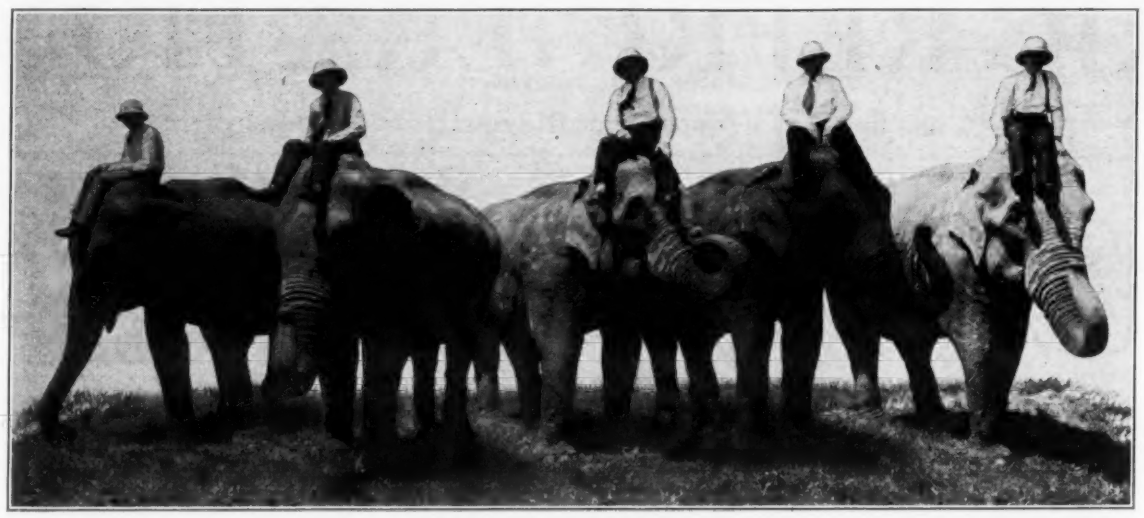
The official guides, who may also be called upon to act as "interpreters" in the foreign lands, are: C. A. Wallis, Atlanta; J. H. Lide, Boston; S. F. Meyers, Buffalo; J. J. Moffatt, Chicago; C. H. Kaufman, Los Angeles; W. H. Loeber, New York City; L. L. Dolin, Philadelphia; J. E. Hugo, Pittsburgh; J. A. Clark, San Francisco; P. R. Miller, Seattle, and A. B. Murphy, St. Louis.

GENE TUNNEY EQUIPS HOME WITH G. E. APPLIANCES

LONG RIDGE, Conn.—Gene Tunney's home is now fully equipped with General Electric appliances.

Three General Electric refrigerators have been installed there—a CS-270 for the kitchen, and SD-40 models in the pantry and nursery. A Hotpoint range, model RA-79, a dishwasher, an ironer, clothes washer, and plate warmer are the other new pieces of equipment.

Off to the 'Seven Wonders'



R. C. Cosgrove (center), manager of the Westinghouse refrigeration division, heads the Westinghouse sales journey to the Seven Wonders of the World. Other leaders of the sales contest, perched on these peanut-packing pachyderm models, are: S. H. Pittman, Roger Bolin, L. K. Baxter, and Paul Endriss.

NORGE STAFF STARTS 'EXTRA POWER DRIVE'

(Concluded from Page 1, Column 3)

1932 sedan and a wrist watch, respectively.

Every Norge dealer has enrolled the members of his sales crew in the contest, and has assigned each salesman a quota of units to be sold during the drive.

During the opening week, each salesman is required to make Norge user calls, in order to secure a list of prospects for use during the contests's remaining six weeks.

All salesmen have been supplied with sales tools and programs, and will receive throughout the drive colored promotional broadsides to be used in conjunction with the "door-openers." Dealers, also, will receive such sales aids.

Distributors in Charge

A feature of the campaign is that each distributor is directly in charge of the drive's activities in his territory, and is therefore free to make such changes and additions as he sees fit.

Dealers will keep animated sales charts for each of their salesmen during the Extra Power contest. The chart is constructed on the quota basis, and as sales are made, a miniature Viking ship sails north, while at the same time, the temperature in an accompanying thermometer drops.

At 50 degrees—the halfway point on the thermometer—the salesman has sold his quota, and is ready to enter the race for the big prizes. Minor awards will be made to all salesmen for their first three sales.

Crossword Puzzle Contest

The Norge crossword puzzle and essay contest will be employed to bring prospects to dealer showrooms. Anyone not connected with the Norge Corp., the Borg Warner Corp., or the subsidiaries, associates, dealers, distributors, salesmen, advertising agents, or contest judges of these organizations, may enroll in the contest at the store of any Norge dealer.

Each contestant will receive a book containing 15 crossword puzzles and a running story of Norge refrigeration. On each page of the story will be some term or terms needed to complete a puzzle.

In addition to working each puzzle, each entrant must write an essay of not less than 250 words on "Why I Prefer the Norge." Invitations and instructions for enrolling in the contest will be printed in key city newspapers throughout the country, and in national magazines.

The prize money of $25,000 will be divided into 50 territorial prizes of $500 each.

Three Tips a Day Keep Iceman Away

DETROIT—Another story of how three tips a day kept the iceman away was heard when Mrs. Rose J. Torreano walked into the showroom of Caswell, Inc., General Electric distributor for Michigan, and placed on the counter a box containing $26 in dimes as the first payment on a model P-6 electric refrigerator.

Salesman Samuel C. Meyers had been contacting the Torreano family for six months, explaining the merits of electric refrigeration, but the heads of the household felt that the investment was too great. Finally the salesman urged Mr. Torreano to leave a dime "tip" at his plate for Mrs. Torreano. The Torreanos say that they will make all other payments by the same method.

Questionnaires Sent By Stewart-Warner

(Concluded from Page 1, Column 4)

decorated with another color (if so, what combination).

2. Do you like the present rectangular or square design, or would you like to see some artistic design at top, edges, or on panels? Suggestions, if any.

3. Do you like handles, latches, and hinge hardware in chromium plate, or would you prefer a dull finish, an enamel finish, or a two-toned finish?

4. Do you like a refrigerator with legs under which you will be able to clean, or do you like one that rests directly on the floor with no chance for dirt to gather?

5. Would you prefer ice cube trays divided so as to make about 15 large cubes, or 21 smaller ones? Or, would you prefer one tray divided for large cubes and another for small cubes?

6. If you had a large electric refrigerator would you prefer four ice trays or two ice trays and one large double drawer for freezing desserts?

7. Would you prefer a refrigerator with a cut-away lower shelf to allow room for tall bottles, or would you prefer a partly hinged shelf so that you could use this additional shelf space when there were no tall bottles in the box?

8. Do you think a door which opens by a foot pedal would be more convenient than one which opens with the regular latch handle opener?

9. Do you believe a small electric light bulb, which automatically floods the food compartment with light when the door is opened, is a decided advantage or not?

10. If we could design a door with handles and latches on both right and left side, so that the door could be opened from EITHER the right or left side, would it be of enough practical value to justify its extra cost?

11. Would you like to have the shelves in your refrigerator adjustable for height like bookcase shelves?

12. Would you like sliding shelves that could be pulled out part way to give easy access to dishes?

13. Would you prefer your electric refrigerator to come equipped with a vegetable pan attached to the underside of a shelf like a drawer, or would you like a separate removable one?

14. Would you consider a separate covered cooling drawer in which meat or fish could be kept fresh for a longer period a decided advantage?

15. Would you like an electric refrigerator with a special air tight dish for keeping cheese and other odoriferous foods so the odor would not circulate among other foods?

16. What additional accessories would you be willing to pay extra for, if not furnished with the refrigerator, such as: vegetable pan, water cooler, wire egg basket, covered butter dish, flexible rubber ice tray, wire fruit basket, chilling tray, extra deep.

17. What is there about the present electric refrigerators that you do not like?

18. What other suggestions can you give that would make present electric refrigerators more useful to you?

REX COLE SALESMEN WILL TRY OUT FOR 'OLYMPICS'

(Concluded from Page 1, Column 1)

decided, the team captain (head of the department) and department manager must select a relay and baseball team which will compete in the "Olympic Games" at Travers Island.

Besides the baseball and relay championships of Rex Cole, Inc., which will be decided at this time, other events in the "Olympics" will be: 50-yard dash, potato race, 12-lb. shot put, shoe race, quoits, three-legged race, standing broad jump, fat man's race, baseball throwing contest, shuffleboard.

2,250,000 FRIGIDAIRE STARTS WORLD TOUR

(Concluded from Page 1, Column 5)

Francisco, when the globe-trotting refrigerator goes aboard the *President Pierce,* Dollar Line vessel. Homecoming ceremonies will be held in New York when the unit completes its journey October 11.

In 1933, the 2,250,000th Frigidaire will be a featured display in the General Motors Exhibit at the World's Fair in Chicago.

Will Store Delicacies

Native delicacies, peculiar to each port of call, will be stored in the refrigerator's food compartment at all regular stops. It will be in actual operation during the entire journey, occupying a place in the main salon of the ship. The route followed by the ship is well below the twentieth parallel part of the way, and at Singapore comes almost to the Equator.

At the entrance to the Red Sea, Lascar stokers are taken aboard by coal-burning vessels, as white firemen cannot endure the heat.

Ports of Call

Ports to be visited include: Honolulu, Kobe, Shanghai, Hong Kong, Manila, Singapore, Penang, Colombo, Bombay, Suez, Port Said, Alexandria, Naples, Genoa, and Marseilles.

The Frigidaire sales organization in United States and Canada is tying in with the cruise with a special July and August campaign based on the fact that there are now 2,250,000 of its units in use. A "Two and a Quarter Million" sales campaign is now under way.

During the campaign the sales organization has been given the assignment of making 2,250,000 calls. A new sales booklet which may be left with the prospect, and which is published in tabloid size colorgravure, has been prepared for use in conjunction with the campaign.

NORGE MODEL USED TO STORE RABBIT MEAT

DETROIT—When the Michigan Rabbit Breeders' Association held its annual meeting in the casino at Belle Isle here July 3 and 4, a Norge Model B electric refrigerator equipped with a double glass front was used for displaying a quantity of dressed rabbits to visitors.

'Brooder' Film Opens Door When Other Efforts Fail

DETROIT—F. Kinsey, General Electric refrigerator salesman for Caswell, Inc., Michigan distributor, was about ready to settle the title of "world's worst tipster" upon the person who said T. E. Woolcock of Detroit was a live refrigerator prospect. Mr. Kinsey couldn't even get across the Woolcock threshold.

Finally, in despair, the salesman called at the home of the unhospitable family, knocked on the door, and thrust in his hand with a Jam Handy film projector and two rolls of film—"Natural Radiation," and "General Electric Pays for Itself."

"Take a look at these," he urged, "and I'll come back for the projector tomorrow."

Next morning, there was a telephone call for Mr Kinsey. When he picked up the receiver, he heard these words:

"This is Mrs. Woolcock. Bring out an S-67 and get your down payment."

Mr. Kinsey's condition is not serious.

GIBSON OPENS 'GET YOUR MAN' CAMPAIGN

(Concluded from Page 1, Column 2)

izations will receive a reward of some kind in the "Get Your Man" contest. Rewards are being given in the form of groceries because of the good reception given the Gibson "Bring Home the Groceries" contest which closed a few weeks ago. Dealers will have an opportunity to share in the rewards.

A "Frank S. Gibson, Jr., mystery reward" will be given the leading distributors' salesmen in the contest.

Frank S. Gibson, Jr., vice president in charge of sales, assisted Herbert E. Young, eastern divisional manager, in the meeting held yesterday at the Ambassador Hotel in New York City.

New England, Eastern Meeting

New England and Eastern Gibson distributors attending the New York meeting with their salesmen were: The Louis Buehn Co., Philadelphia; Capital City Distributing Co., Albany, N. Y.; Krich Distributing Co., Newark; H. M. Tower Corp., New Haven, Conn.

H. D. MacRae, Inc., Rochester, N. Y.; Schiller's, Inc., Utica, N. Y.; Superior Auto Accessories Co., Pittsburgh; Johnstown Automobile Co., Johnstown, Pa.; C. Kurtzman & Co., Buffalo; Morison Electrical Supply Co., New York City; Midwest Wholesalers, Inc., Cleveland, and Utterback-Gleason Co., Bangor, Me.

Fireworks for Middle Western distributors will take place in Greenville in a meeting conducted by F. A. Delano, general sales manager for Gibson; W. R. Marshall, sales promotion manager, and G. M. Farrin, divisional manager.

Trip Through Factory

A trip through the factory and a golf tournament at the Greenville Country Club course will be extra attractions furnished this group, which includes the following:

Columbus Distributing Co., Columbus, O.; Gibson Refrigerator Sales Co., Cincinnati; Charles E. Turnock Co., Milwaukee; Morley Bros., Saginaw, Mich.; Peerless Electric Supply Co., Indianapolis; Pugh Furniture Co., Charleston, W. Va.; Poll Electric Co., Toledo, O.; Bay View Furniture Co., Holland, Mich.

South Bend Electric Co., South Bend, Ind.; L. V. Whitney, Inc., Chicago.

In Kansas City, Mo., F. A. Delano, general sales manager, and H. G. Seldomridge, divisional manager, will conduct a meeting tomorrow.

Those attending will include: Lindemann-Hoffer, Inc., St. Louis; Townley Metal and Hardware Co., Kansas City; Harry Moll, Inc., Denver; The Higgins Co., Omaha.

Meeting at Nashville

P. W. Peck, southeastern divisional manager, and W. R. Marshall, sales promotion manager, will conduct the meeting in Nashville, Tenn., Friday.

Distributors who will attend are: Columbus Iron Works Co., Columbus, Ga.; Kennedy Bros., Biloxi, Miss.; Keith, Simmons Co., Nashville, Tenn.; Stevens Radio Sales Co., Miami, Fla.; Morgan, Inc., Savannah, Ga.; Dixie Utilities Co., Richmond, Va.; Tower Co., Jacksonville, Fla.; O. D. Tucker Co., Little Rock, Ark.

On the West Coast, L. E. Taufenbach will conduct meetings of Gibson distributors and salesmen, assisted by H. L. Smith, assistant service director. Distributors attending are:

Herbert H. Horn Co., Los Angeles; Inter-Mountain Electric Co., Salt Lake City; Home Electric Co., Tacoma, Wash.; Waterhouse-Lester-Scovel Co., San Francisco.

Executives Feted

GREENVILLE, Mich.—Thirty executives of the Gibson Electric Refrigerator Corp., were guests at the home of Charles J. Gibson, president of the firm, last week.

Festivities started with a banquet during which two opposing tables sang in competition. The Frank S. Gibson, Jr., table outsang the other due to the leadership of F. A. Delano, general sales manager, who was at one time with the Metropolitan Opera Co.

Honor guest of the evening was John "Dugan" Christensen, jovial "Ambassador from Denmark."

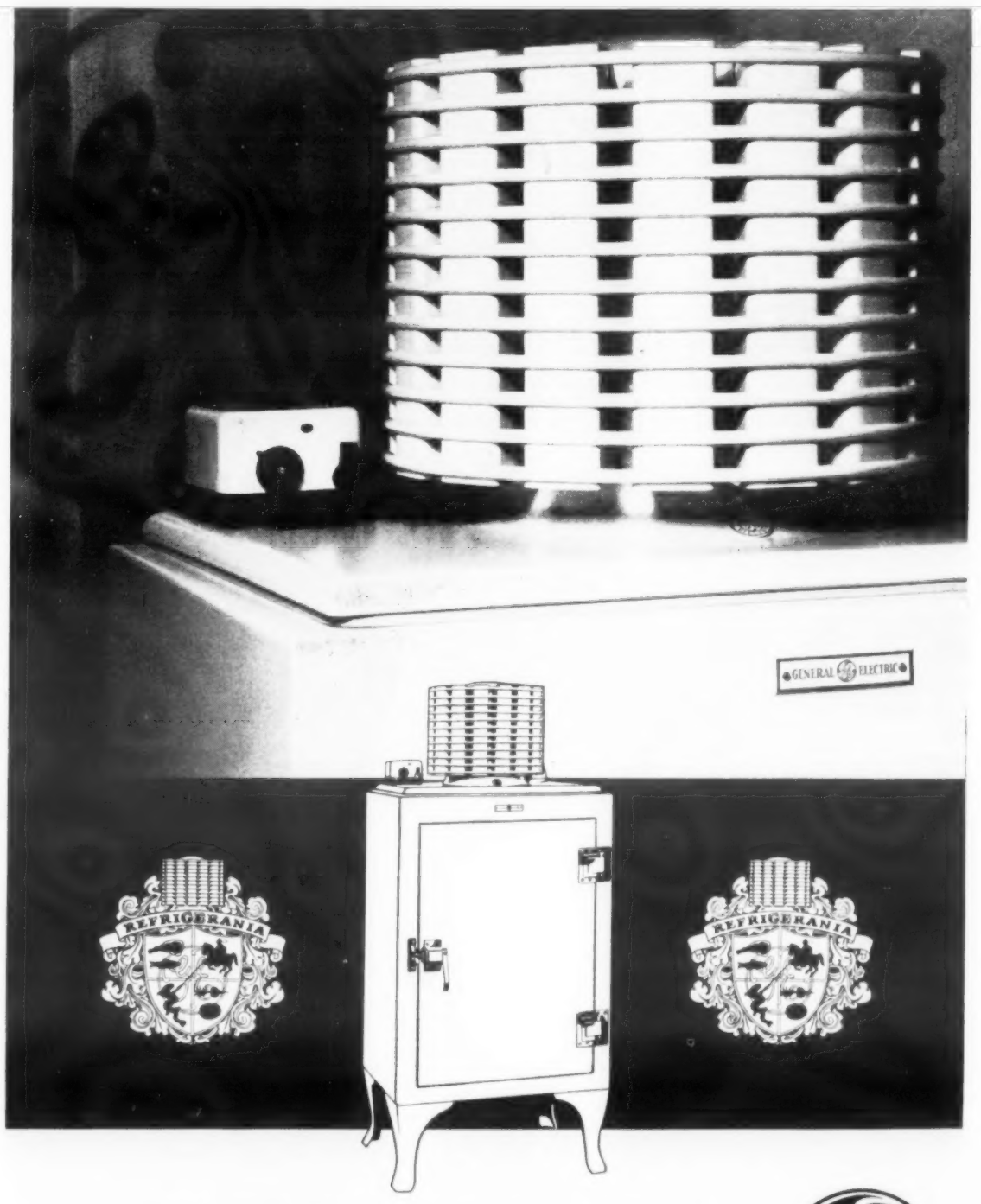
Gibson executives present included: Frank S. Gibson, Jr., Edwin D. Jacobs, Arnold Baldwin, F. A. Delano, Milo Christensen, Howard Wilson, G. C. Frieke, Albert Jack, Ralph Speer, C. W. Coye, C. I. Horowitz, W. R. Marshall, G. B. Riddle, C. M. Brown, T. B. Terry, H. M. Scarff, Elmer Born, W. Hallstein, R. T. Smith, C. H. Smith, I. J. Sexton, William Bradley, Louis Hamper, and William Briggs.

DETROIT MAN WINS NORGE IN TREASURE HUNT

DETROIT—Albert Allagreen of Woodlawn Ave. was announced recently as winner of the Model A Norge electric refrigerator given by the *Detroit Times* in the fourth week of its treasure hunt contest. The unit was contributed by the Republic Supply Corp., Michigan distributor for Norge refrigerators.

*"The Knight in the White Castle"**

DEFENDER OF PROFITS!



TRUE PROFIT is not so much a matter of "What do you make on each sale" as "How much of your gross profit can you *keep?*" In the business of selling electric refrigerators, product performance and retailers' profits are inseparably bound together. Frequent and expensive servicing, due to unsatisfactory product performance, can eat up the very profits a sale has made.

The General Electric Refrigerator, with the famous Monitor Top mechanism, is the most dependable and reliable electric refrigerator made. Every moving part is completely sealed-in-steel inside the Monitor Top. There is no mechanism inside or underneath the cabinet. The user can't tinker with it . . . can't even oil it! It's trouble-proof; moisture-proof; air-tight and water-proof.

An established General Electric policy places the responsibility for the G-E Refrigerator's satisfactory performance squarely on the shoulders of the manufacturer. The G-E retailer need not maintain an expensive servicing department. In case of failure of the G-E mechanism, the entire unit is replaced by the manufacturer. No delay, no lost motions and a minimum of expense.

The Monitor Top . . . the "Knight in the White Castle" . . . is the champion of health in one out of every three homes enjoying the benefits of electric refrigeration today. The reason for this phenomenal success is the General Electric's unfailing dependability. The result of such faultless performance is summarized in these words . . . "General Electric Refrigerator retailers can *keep* their profits!"

* *"The Knight in the White Castle" is a richly illustrated, beautifully printed book . . . written for children in charming rhymes. If you are an electric refrigerator dealer and would like a copy for your child just say on a post-card, "Send my child a copy of 'The Knight in the White Castle'", and give your child's name and address. Send your postal to General Electric Co., Electric Refrigeration Dept., Section DF71, Hanna Bldg., Cleveland, O.*

GENERAL ELECTRIC

ALL-STEEL REFRIGERATOR

DOMESTIC, APARTMENT HOUSE AND COMMERCIAL REFRIGERATORS — ELECTRIC WATER COOLERS

LITTLE STORIES OF INTERESTING PEOPLE IN THE REFRIGERATION INDUSTRY

THE EXPANSION VALVE

LITTLE STORIES OF INTERESTING IDEAS IN THE REFRIGERATION INDUSTRY

By George F. Taubeneck

Red-Headed Girl

If you're a radio fan you've undoubtedly heard "the Angel of the Air," Miss Doris Robbins—also known as "the Lullaby Lady." For the last 10 months she has been singing nightly over WGN, the *Chicago Tribune* station, with Herbie Kay and his band. Her fan mail is said to rival Clark Gable's.

If you don't listen to the radio—or if you go to bed at 11 o'clock every night and haven't heard her famous 12:30 broadcasts, you have missed one of the joys of living. Her warm, heart-tugging voice has such an element of sincerity in it that once you hear her you become a Robbins convert forever.

Whether or not you've listened breathlessly to "the Angel of the Air," it may interest you to know that this girl, who was co-starred with Eddie Cantor in "Whoopee," probably owes her career to the desire for an electric refrigerator.

Three years ago Doris Robbins was living obscurely in Detroit. She had married quite young, and had a cute baby boy to show for it—and not much else. Friend hubby was a good lover, but not much of a provider.

Doris disliked cooking over a hell-fire-and-brimstone coal stove. She detested removing the drip pan from under the icebox. Being young and pretty, she wanted better clothes. Being a proud mother, she wanted to dress up Jackie-boy and show him off. Being red-headed, she got what she wanted.

Now an electric refrigerator was not by any means the only thing she wanted.

But to Doris it symbolized all her longings—something automatic, cool, carefree, good-looking, modern, and of which she could be proud.

She got tired of waiting for her young husband to get one for her; and set out for New York to see if she couldn't get some of this world's goods for herself.

She did.

The tale of her skyrocket rise is a tale of luck, grit, dramatic instinct, and the gift of a genuinely good voice. When she arrived in New York City, she looked up an old friend in the music publishing business. He asked Doris if she could sing as well as she used to do at parties. She could, and did.

On this friend's office piano were some new numbers his house had just issued. He played them, and Doris sang. Passing by in a hall outside was a famous Manhattan cafe owner. He stopped, listened, looked inside.

"Where are you working now?" he asked the red-head who didn't like drippans and hot cookstoves.

"I'm not, but I'd like to," she smiled.

"Okay. Bring your voice and your smile and come out to the Chateau Madrid tonight."

That night Doris gave the band leader five numbers she knew. The master of ceremonies looked them over, and warned:

"Don't you dare sing 'Love Me or Leave Me.' That's Ruth Etting's big number, and she and her husband are sitting at a table over there by that post."

Doris sang, and smiled, and the crowd became ga-ga. They called for encore after encore, until she ran out of songs. And so, orders or no orders, she sang "Love Me or Leave Me."

Her audience went wild. So did Etting and her husband. Next day the Etting family raised so much fuss about the red-head who "stole Ruth's stuff" that Manager Sharp of "Whoopee" decided to go out and hear this new torch singer.

That was Friday night. Saturday afternoon Doris was signed to replace Ruth Etting in "Whoopee" (Etting had already served notice).

The following Monday night Miss Robbins made her debut in that show—with Ruth Etting in the front row!

After the New York stand and the road tour of "Whoopee" had closed, Miss Robbins went on the RKO vaudeville circuit.

Thence to Chicago, where she built a great radio following over WGN, and at the Blackhawk restaurant with Herbie Kay and his band.

She is now in Detroit for a short engagement at Blossom Heath, where Gerald Marks and his band play. This spring Mr. Marks wrote for Doris, "You're the One, You Beautiful Son-of-a-Gun," and she introduced it over the ether.

Doris likes to ride and read, and to drive her new Plymouth. But outside of playing with son Jack, she likes nothing so much as making people thrill to her voice and facial gestures.

Jack, incidentally, now has the things he was needing.

Doris says she'll never go back to housekeeping—not unless she has a kitchen full of machines and devices which will order the groceries, cook the meals, set the table, clean the dishes, and straighten up.

She does admit that she likes to putter around her aunt's electric refrigerator, however. Likes to make jellied veal loaf, fancy frozen salads, ices and cold puddings.

Know why? First, because it was desire for a refrigerator that helped her decide to strike out for herself. Second, because she can have the fun of preparing food without getting hot.

Gerald Hulett, W. A. Grove, or somebody should tell her about the electric range.

'The Angel of the Air'

Miss Doris Robbins, radio and musical comedy star, wanted an electric refrigerator—and the standard of living it connoted—so badly that she left home and husband to get it. Read how, in an adjoining column.

* * *

Adventures in Cabinet Designing

Francis Wexelberg is the man who designed the new Fords and the new Lincolns. He has designed many other bodies for Henry Ford. He is also the designer of the LeBaron custom bodies used by Pierce-Arrow, Franklin, and many others.

On the fourth floor of the Briggs Body plant in Detroit, Mr. Wexelberg has a beautiful office suite, which also serves as a studio. Here he and his assistants work out the designs he conceives.

First the design takes form as a line drawing. Then it takes color as a painting. Next it takes shape as a clay model, done to scale. And finally Briggs engineers make the dies and moulds, and everything is ready for production.

Some time ago the Briggs Mfg. Co., which is making refrigerator cabinets for Westinghouse in addition to its automobile body building business, turned Mr. Wexelberg loose upon the problem of designing beautiful refrigerator cabinets.

Not a single catalog, piece of literature, or picture of a refrigerator was allowed in the place. He was to start from scratch and was to be entirely uninfluenced by anything which had been done in the past.

Requirements and functions of an electric refrigerator cabinet were laid out before him. It was then up to him to translate these into terms of beauty, economy and utility

Last week Jack Schaefer and the writer were invited out to Mr. Wexelberg's office-studio-salon for a preview of some of the models he has worked out. We came, we saw, and we were conquered.

We were greeted by Earl Merrett, refrigeration sales engineer, who ushered us into Mr. Wexelberg's salon.

One end of the salon was carpeted and draped, and had a turntable. On this "stage" were several models of electric refrigerator cabinets which were quite unlike anything on the market today.

Streamlined, in colors, utilizing continuous legs, conspicuous by the absence of visible hardware, these models possessed—in our humble judgments—genuine beauty.

They were, moreover, so entirely different from anything else we had ever seen that their individuality was even more apparent than their beauty.

Later we were shown some even more advanced — almost radical — designs. These designs were embodied into one-fifth-actual-size mahogany models, and were darbs.

When refrigeration engineers first looked over Mr. Wexelberg's cabinets, they shook their heads.

These cabinets had no breaker strips. The porcelain food compartment liner was green, instead of white. Hardware was concealed. Legs were continuous. Ventilation couldn't be adequate.

But Mr. Wexelberg demonstrated that his concealed louvres afford more ventilation than the more obvious cowl type. He showed how his cabinets could function without breaker strips. And he satisfied them that the hardware he used would work smoothly and efficiently.

Engineers agreed with him that a green porcelain food compartment would cost less to produce than the familiar white variety. It takes two coats of white porcelain enamel to conceal the black ground coat, whereas one coat of green would do the trick.

But the engineers weren't sure that green food compartments would sell. Neither, of course, is Mr. Wexelberg. But he would like to try and see.

They had him, though, on the continuous legs.

Almost everybody agreed with him that the continuous legs were more handsome than the stuck-on type. But it seems that architects' specifications are by no means uniform; and that sometimes it is necessary to remove the legs in order to fit a refrigerator into the space allotted to it.

Mr. Wexelberg is by no means through designing refrigerator cabinets. He has really just begun. The evolution in the various Wexelberg-designed models which were shown to us was almost astounding; and we were assured that forthcoming models might be even more startling.

Mr. Merrett's enthusiasm seems as vast as Mr. Wexelberg's imagination.

He hopes to make the phrase, "Cabinet by Briggs" as significant in the refrigeration industry as "Body by Briggs" is in the automotive industry.

Having spent considerable time in the refrigeration industry, he knows that "Cabinet by Seeger" has a big head start on him.

He is a great pooh-pooher of problems, however. Lacquer? That's easy. Briggs has been Duco-ing auto bodies for years, and their "paint jobs" seem to hold up in New Orleans well enough. Can't porcelain those streamlined corners? Wrong again. They have already done it.

Wexelberg and Merrett make a great team. All they need now are some orders.

* * *

Another Terhune Ride

E. A. Terhune, Copeland distributor in Boston and the biggest distributor in the Copeland organization, steamed into Detroit at the crack o'dawn last Friday, and pulled us out of bed. He wanted a ride.

Old-time readers of the Valve may recall the gentle razzing we once gave Boston in "An Editor on Wheels," the Oh-yeah-izzat-so letter Mr. Terhune wrote in reply, his promise to "take us for a ride" next time we landed in Beantown, and how he made good his threat by practically railroading us into the Boston hoosegow.

And now "Terry" was in Detroit, accompanied by his attractive wife who is undoubtedly one of the best-lookers in the entire refrigeration industry—and that's covering lots of territory.

Moreover, he wanted to go someplace, and he was getting lost every time he tried to make a left turn. So we hauled the speedster out and gave him the sort of ride we've given John Ditzell of Majestic, Paul Jones of Servel, Jim Nance of Frigidaire, Bill Myers of Trupar, and R. C. Cosgrove of Westinghouse—the shut-your-eyes-and-pray kind.

"Terry" had a strange mission. He, a Copeland man, had to invade enemy territory. He had to visit the Kelvinator factory. For some time he has been distributor for the Rightway oil burner. Recently Kelvinator acquired Rightway. Kelvinator has a branch in Boston which, of course, will now supplant Mr. Terhune with the handling of that line.

So Mr. Terhune had to poke his nose into the Kelvinator factory, look up J. A. Harlan, and make arrangements for turning over his Rightway stock to Kelvinator.

The Valve acted as bodyguard, so as to reassure "Terry" that he wouldn't be lured into some of the subterranean passageways of the huge Kelvinator plant, and be held captive until he signed a pledge to forget refrigeration and go into the insurance business.

Mr. Terhune has a simple formula for solving the present problems of distributing electric refrigerators. The chief problems: the financing of dealer sales, the spurring of frightened dealers, meeting low prices, and fighting the competition of the multitude of new dealers who are selling a few units each by making special discounts to friends and relatives.

"Terry" answers these problems by replacing dealers with more and better salesmen. He literally makes dealers out of good salesmen. His central showroom in Boston is used by all these dealer-salesmen. He finances their sales, and handles all servicing.

A specified percentage of the combined dealer-salesman discount is subtracted for financing, servicing, advertising, and display. The discount left is still considerably more than the salesman could make working under a dealer.

The scheme, "Terry" reports, is working.

Just as an aside, it might be interesting to note that at one time Mr. Terhune was working with H. W. Newell as a retail sales manager in the New England territory for Frigidaire. Mr. Newell is now vice president in charge of sales of the Frigidaire Corp.

* * *

Vance Woodcox

While we were out at the Kelvinator plant we thought it a good time to drop in on Vance Woodcox, the handsome and serious young man who has been promoted from sales promotion manager to advertising manager of Kelvinator.

We found George Cullen, who had just given birth to a dandy new word, "Kelvindom," and George Wilcock, inspirational sales message writer, blowing smoke at each other across paired desks; but we couldn't locate Mr. Woodcox.

J. S. Sayre, sales manager of the company, however, does have things to say about the new advertising director, and all of them good.

One of them is that Mr. Woodcox's appointment comes by way of recognition for his "record of achievement made in several responsible positions since joining the company in 1926."

The Woodcox Kelvinator record includes these jobs: assistant to the sales manager, district manager in the field, domestic sales manager, and, since 1930, sales promotion manager.

Mr. Sayre explains that the personnel of both departments—sales promotion and advertising—will remain intact, and that the company is planning for this and future seasons a constantly increasing schedule of advertising.

Mr. Sayre is strongly of the opinion that Kelvinator sales increases have been in direct proportion to the organization's constantly growing volume of advertising.

* * *

Meeting the Depression

Over the Fourth we rusticated in the small, Middle Western town of our boyhood days. This town, situated in and depending upon a large agricultural area, has been in the midst of a depression ever since the War.

Today its citizens are in pretty bad straits. But we found the following enterprising citizens doing the following things:

1. The Frigidaire dealer—still the only bona fide electric refrigeration dealer in the whole county—is concentrating on commercial business. And, working the economy argument to a fare-you-well, he is getting results.

2. The Ford dealer, hard up for something to do and sell while Ford was tooling up for the new V-8, ordered a job-lot of General Electric water coolers, and another job-lot of coin-slot paper drinking cup venders. He sold one of each to a number of filling stations, on the theory that in time thirsty tourists would drop enough pennies and nickels in the cup-vender slot to pay for the machine.

3. The sole county bootlegger and blind-pig operator faced a big slump in business. He was also facing the annual deep valley in his sales curve which occurs at apple-ripening time (apple-cider becomes hard cider quickly; and it seems to satisfy all palates down there). So he began bootlegging gasoline from tax-free states. The same bootlegging facilities may be used for each liquid, he finds. He now operates two filling stations—one for the tummy and one for the car—at the same old stand. His gas sells at three cents a gallon less than that of any other station within 100 miles, and he does a big business.

4. The town druggist and the assistant county clerk—both pillars of the church—are augmenting their incomes by playing clarinet and trombone, respectively, in a dance orchestra which holds forth on week-ends in a neighboring city. Incidentally, the moving picture house, which heretofore has always been kept closed on the Sabbath, now does its best business on that day. *Sic semper mores.*

5. Everybody is following Henry Ford's advice and raising a garden.

* * *

Rex Cole Proposes

Not long ago we pointed out that Rex Cole, camouflaged slightly and renamed "Bill Burke," is the hero of Faith Baldwin's new novel, "Self Made Woman," which is now running serially in *Cosmopolitan*.

Your reporter is glad to bring you the tidings that in the August instalment, the heroine decides she is hopelessly in love with Rex; and then he surprises her mightily by proposing. In the next issue she'll undoubtedly accept.

~~AUTOCAR~~
~~APPERSON~~
AUBURN
~~AUTO DYNAMIC~~
~~AJAX~~
~~AKRON~~
~~AUTO MOTOR~~
~~AMERICAN (Elec.)~~
~~AMERICAN (Gas)~~
~~AMERICAN (Steam)~~
~~AUTO VEHICLE~~
~~ADAMS FARWELL~~
~~AEROCAR~~
~~AURORA~~
~~ATLAS~~
~~ALLEN KINGSTON~~
~~ALBANY~~
~~ANGUS~~
~~ALCO~~
~~AMERICAN~~
~~AMPLEX~~
~~ALPENA~~
~~ABBOTT DETROIT~~
~~ARGO (Elec.)~~
~~AUSTIN~~
~~ALLEN~~
~~ANDERSON~~
~~ALTER~~
~~AMERICAN~~
~~ACE~~
~~AMBASSADOR~~
~~ADRIA~~
~~AJAX~~
AUSTIN
~~BAKER~~
~~BALDWIN~~
~~BACHELLES~~
~~BOLTE~~
~~BUFFALO (Elec.)~~
BUICK

~~BALDNER~~
~~BINNEY & BURNHAM~~
~~BRAMWELL~~
~~BUFFALO~~
~~BERG~~
~~BRASIER~~
~~BRISTOL~~
~~BUCKMOBILE~~
~~BLOOD~~
~~BUCKEYE~~
~~BATES~~
~~BLACK DIAMOND~~
~~BEVERLEY~~
~~BLOMSTROM~~
~~BERKSHIRE~~
~~BABCOCK (Elec.)~~
~~BRUSH~~
~~BUCKMOBILE~~
~~BLACK~~
~~BAILEY (Elec.)~~
~~BYRIDER (Elec.)~~
~~BROWNIEKAR~~
~~BENNER~~
~~BERGDOLL~~
~~BRIGHTON~~
~~BRISCOE~~
~~BELL~~
~~BREWSTER~~
~~BIDDLE~~
~~BEN HUR~~
~~BOUR-DAVIS~~
~~BIRCH~~
~~BOWMAN~~
~~BEGGS~~
~~BAY STATE~~
~~BARLEY~~
~~BLACKHAWK~~
~~COLUMBIA (Elec.)~~
~~CENTURY (Gas)~~
~~CROWDUS (Elec.)~~

~~COLLINS (Elec.)~~
~~CHAPMAN (Elec.)~~
~~CENTURY (Elec.)~~
~~COLUMBIA (Gas)~~
~~CANDA~~
~~CENTURY (Steam)~~
~~COTTA~~
~~CUNNINGHAM (Steam)~~
~~CONRAD~~
~~CLARK~~
~~CHELSEA~~
~~CAPITOL~~
~~CLOUGHLEY~~
CADILLAC
~~COVERT~~
~~CRESTMOBILE~~
~~CLEVELAND~~
~~CENTAUR~~
~~CINCINNATI (Steam)~~
~~CLARKMOBILE~~
~~CREST~~
~~CHURCH~~
~~CORBIN~~
~~COLUMBUS (Elec.)~~
~~CRAWFORD~~
~~CAMERON~~
~~COLBURN~~
~~CARTERCAR~~
~~COSMOPOLITAN~~
~~CATO~~
~~C. V. I.~~
~~CONTINENTAL~~
~~C. P.~~
~~COMET~~
~~COATES-GOSHEN~~
~~COLT~~
~~CHALMERS~~
~~CHAMPION~~
~~CASE~~
~~COLE~~
~~CHADWICK~~
~~CUTTING~~
~~CORREJA~~
~~COURIER~~
CUNNINGHAM
CHEVROLET
~~CHURCHFIELD~~
~~CHANDLER~~
~~CAMERON~~
~~CROW-ELKHART~~
~~COLUMBIA~~
~~CORBITT~~
~~COMMONWEALTH~~
~~CLEVELAND~~
~~COLONIAL~~
~~CLIMBER~~
~~COATS (Steam)~~
~~CORINTHIAN~~
~~COURIER~~
CHRYSLER
CORD
~~DURYEA~~
~~DARLING~~
~~DESBERON (Steam)~~
~~DECKER~~
~~DARROW~~
~~DAVENPORT~~
~~DYKE~~
~~DOLSON~~
~~DE LUXE~~
~~DORRIS~~
~~DUER~~
~~DETROIT ELECTRIC~~
~~DUROCAR~~
~~DAVIS~~
~~DE TAMBLE~~
~~DETROITER~~
DODGE
~~DORT~~
~~DILE~~
~~DRUMMOND~~
~~DANIELS~~
~~DIXIE FLYER~~
~~DISPATCH~~
~~DOBLE (Steam)~~
~~DISBROW~~

~~DOUGLAS~~
du PONT
DUESENBERG
~~DRIGGS~~
~~DURANT~~
~~D. A. C.~~
~~DAGMAR~~
~~DIANA~~
~~DURANT~~
DE SOTO
DEVAUX
~~EMPIRE~~
~~ELMORE~~
~~ECLIPSE~~
~~ECONOMY~~
~~ESSEX~~
~~EARL~~
~~EVERYBODY'S~~
~~E. M. F.~~
~~ELCAR~~
~~EVERITT~~
~~EDWARDS-KNIGHT~~
~~ENGER~~
~~EMPIRE~~
~~ELGIN~~
~~EAGLE ROTARY~~
ESSEX
~~EARL~~
~~ERSKINE~~
~~FOSTER~~
~~FANNING~~
~~FISCHER~~
~~FRIEDMAN~~
FRANKLIN
~~FLINT~~
~~FREDONIA~~
FORD
~~FRAYER~~
~~FOSTORIA~~
~~FRITCHIE (Elec.)~~
~~FULTON~~
~~FEDERAL~~
~~FLANDERS~~
~~FULLER~~
~~FARMACK~~
~~F. R. P.~~
~~FERRIS~~
~~FOX~~
~~FRIEND~~
~~FALCON~~
~~FREMONT~~
~~FIAT~~
~~FLINT~~
~~FALCON~~
~~GROUT~~
~~GREAT (Pierce-Arrow)~~
~~GURLEY~~
~~GASMOBILE~~
~~GENEVA~~
~~GLIDE~~
GENERAL
~~GREELEY~~
~~GIBBS (Elec.)~~
~~GRAHAM~~
~~GARFORD~~
~~GREAT SMITH~~
~~GAYLORD~~
~~GREAT WESTERN~~
~~GRANT~~
~~GHENT~~
~~GARDNER~~
~~GEARLESS~~
~~GRAY~~
~~GRAHAM-PAIGE~~
GRAHAM
~~HAYNES-APPERSON~~
~~HOLYOKE~~
~~HAYNES~~
~~HOWARD~~
~~HOFFMAN (Steam)~~
~~HUDSON (Steam)~~
~~HOLLEY~~
~~HOLSMAN~~
~~HEWITT~~
~~HATFIELD~~
~~HAY BERG~~

~~HALLADAY~~
~~HEINE-VELOX~~
HUPP
HUDSON
~~HERRESHOFF~~
~~HENRY~~
~~HUPP YEATS (Elec.)~~
~~HENDERSON~~
~~HAVERS~~
~~HERFF-BROOKS~~
~~HOLLIER~~

~~HARVARD~~
~~HUFFMAN~~
~~HARROUN~~
~~HACKETT~~
~~H. A. L.~~
~~HANSON~~
~~HOLMES~~
~~H. C. S.~~
~~HANDLEY-KNIGHT~~
~~HERTZ~~
~~INTERNATIONAL~~
~~IMPERIAL~~
~~IROQUOIS~~
~~IMPERIAL~~
~~INTERSTATE~~
~~JACKSON~~
~~JEFFERY~~
~~JONES-CORBIN~~
~~JAXON~~
~~JOHNSON~~
~~JEWELL~~
~~JENKINS~~
~~JORDAN~~
~~JONES~~
~~JEWETT~~
~~KENSINGTON~~
~~KNOX~~
~~KEYSTONE~~
~~KIDDER~~
~~KUNZ~~
~~KONIGSLAW~~
~~KING~~
~~KISSEL~~
~~KEETON~~
~~K. R. I. T.~~
~~KLINE~~
~~KERNS~~
~~KENT~~
~~KELSEY~~
~~KENWORTHY~~
~~KURTZ~~
~~LOCOMOBILE~~
~~LEACH~~
~~LANE (Steam)~~
~~LEWIS~~
~~LOOMIS~~
~~LOZIER~~
~~LOGAN~~
~~LUVERNE~~
~~LORRAINE~~
~~LINCOLN~~
~~LEXINGTON~~
~~LAMBERT~~
~~LYON~~
~~LENOX~~
~~LYONS KNIGHT~~
~~LEWIS~~
~~LAUREL~~
~~LIBERTY~~
~~LORRAINE~~
~~LAFAYETTE~~
~~LEACH BILTWELL~~
LINCOLN
~~LONE STAR~~
~~LONG~~
LaSALLE
~~MOBILE~~
~~MARLBORO~~
~~MILWAUKEE~~
~~MONCRIEF~~
~~MOHAWK~~
~~MATHESON~~
~~MOYEA~~
~~MODEL~~
~~MACKLE-THOMPSON~~
~~MITCHELL~~
~~MARR~~
~~METEOR~~
MARMON
~~MORSE~~
~~MOLINE~~
~~MAXWELL-BRISCOE~~
~~MERCURY~~
~~MONARCH~~
~~MOON~~
~~MARYLAND~~
~~MORA~~
~~MASON~~
~~MEDIA~~
~~MIER~~
~~MIDLAND~~
~~McCUE~~
~~METZ~~
~~McINTYRE~~
~~MARION~~
~~MAXWELL~~
~~MERCER~~
~~MOLINE~~
~~MOTORETTE~~
~~MARQUETTE~~
~~McFARLAN~~
~~MARATHON~~
~~MIGHTY MICHIGAN~~
~~MOLINE KNIGHT~~
~~MECCA~~

~~MOORE~~
~~MADISON~~
~~MONITOR~~
~~MONROE~~
~~MAIBOHM~~
~~MARION HANDLEY~~
~~MACON~~
~~MURRAY~~
~~MARTIN-WASP~~
~~MARSHALL~~
~~METEOR~~
~~MERIT~~
~~METROPOLITAN~~
~~MARQUETTE~~
~~NATIONAL~~
~~NEW HOME~~
~~NORTON~~
~~NEUSTADT-PERRY~~
~~NIAGARA~~
~~NORTHERN~~
~~NORWALK~~
~~NEW ERA~~
~~NELSON~~
NASH
~~NOMA~~
~~NORTHWAY~~
OLDSMOBILE
~~OHIO (Elec.)~~
~~ORIENT~~
~~OVERLAND~~
~~ORMOND~~
~~OXFORD~~
~~OAKLAND~~
~~OVERLAND~~
~~OTTO~~
~~OWEN MAGNETIC~~
~~OGREN~~
~~OLYMPIAN~~
~~POPE-HARTFORD~~
PACKARD
PEERLESS
~~PEOPLES~~
PIERCE-ARROW
~~POMEROY~~
~~PRESCOTT~~
~~POPE-ROBINSON~~
~~PHELPS~~
~~PREMIER~~
~~PUNGS-FINCH~~
~~POPE-TOLEDO~~
~~PLANCHE~~
~~PENNSYLVANIA~~
~~POSTAL~~
~~PALMER-SINGER~~
~~PULLMAN~~
~~PERFECTION~~
~~PAYNE MODERN~~
~~PETROL~~
~~PATERSON~~
~~PAIGE~~
~~PILOT~~
~~PARRY~~
~~PENN~~
~~PATHFINDER~~
~~PARTIN-PALMER~~
~~PILGRIM~~
~~PILLIOD~~
~~PONDER~~
~~PAN-AMERICAN~~
~~PIEDMONT~~
~~PAN~~
~~PARENTI~~
~~PORTER~~
PONTIAC
PLYMOUTH
~~RIKER~~
~~REMINGTON~~
~~ROBINSON~~
~~READING~~
~~ROGERS & HANFORD~~
~~REDER~~
~~RAMBLER~~
~~RUSSELL~~
~~REGAS~~
~~RAPID~~
REO
~~ROYAL TOURIST~~
~~ROTARY~~
~~ROSS~~
~~RAINIER~~
~~RAUCH & LANG~~
~~REGAL~~
~~ROADER~~
~~R-C-H~~
~~REPUBLIC~~
~~RIDDLE~~
~~ROAMER~~
~~REVERE~~
~~ROCK FALLS~~
~~R & V KNIGHT~~
~~RANGER~~
ROLLS ROYCE
~~RICHELIEU~~
~~RICKENBACKER~~
~~RUBAY~~
~~ROLLIN~~
~~ROOSEVELT~~
~~ROXTON~~
ROCKNE
~~STANLEY (Steam)~~
~~STEARNS (Steam)~~

~~ST. LOUIS~~
~~SPAULDING~~
~~SKENE~~
~~SUNSET~~
~~SHAIN~~
~~SMITH & MABLEY~~
~~STEAMOBILE~~
~~STEVENS-DURYEA~~
~~STORCK~~
~~STANDARD~~
~~STUDEBAKER (Elec.)~~
~~SANDUSKY~~
~~STEARNS (Gas)~~
~~SHELBY~~
~~SANTOS DUMONT~~
~~STUDEBAKER (Gas)~~
~~SYNNESTVEDT~~
~~STURTEVANT~~
~~SPRINGER~~
~~STODDARD-DAYTON~~
~~SAMPSON~~
~~SCHACHT~~
~~SELDEN~~
~~SUCCESS~~
~~SINGLE CENTER~~
~~SENATOR~~
~~SULTAN~~
~~SIMPLICITY~~
~~SPEEDWELL~~
~~SAYERS~~
~~STAVER~~
~~SPRINGFIELD~~
~~SHOEMAKER~~
~~STUDEBAKER E. M. F.~~
STUDEBAKER
~~S. C. V.~~
~~STUYVESANT~~
STUTZ
~~SAXON~~
~~SPHYNX~~
~~STERLING-KNIGHT~~
~~SCRIPPS-BOOTH~~
~~SPOERER~~
~~SPAULDING~~
~~STEWART~~
~~SINGER~~
~~STEPHENS~~
~~STANDARD~~
~~SUN~~
~~SIMPLEX-CRANE~~
~~SENECA~~
~~STATES~~
~~SEVERIN~~
~~SHAW~~
~~SHERIDAN~~
~~SKELTON~~
~~SPENCER~~
~~STANWOOD~~
~~STAR~~
~~TRIUMPH~~
~~TAUNTON~~
~~THOMPSON~~
~~TWYFORD~~
~~TOLEDO~~
~~THOMAS~~
~~TOURIST~~
~~TINCHER~~
~~TRUMBULL~~
~~TWOMBLY~~
~~TOURAINE~~
~~TEMPLAR~~
~~TEXAN~~
~~TULSA~~
~~U. S. LONG DISTANCE~~
~~UPTON~~
~~U. S.~~
~~VAUGHAN~~
~~VICTOR~~
~~VELIE~~
~~VOGUE~~
~~VIKING~~
~~WINTON~~
~~WHITNEY~~
~~WOODS~~
~~WALTHAM~~
~~WALLS~~
~~WARWICK~~
~~WHITE (Steam)~~
~~WILDMAN~~
~~WALTHIER~~
~~WELCH~~
~~WAVERLY (Elec.)~~
~~WAYNE~~
~~WOLVERINE~~
~~WALWORTH~~
~~WOLF~~
~~WASHINGTON~~
~~WHITE~~
~~WARREN~~
~~WHITING~~
~~WESTCOTT~~
WILLYS-KNIGHT
~~WILLYS SIX~~
~~WOODS~~
~~WINTHER~~
~~WALTHAM~~
~~WILLS STE. CLAIRE~~
~~WHIPPET~~
~~WOLVERINE~~
~~WINDSOR~~
WILLYS
~~VALE~~
~~YORK~~
~~ZIMMERMAN~~

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ONLY 35 *out of* 565!

SINCE the beginning of the automobile industry thirty-odd years ago, five hundred and sixty-five motor car manufacturers have started in business. Only thirty-five are in business to-day. The others have "come and gone." *And with them have gone dealer profits and dealer investments.* All of which is interesting to every electric refrigeration dealer, because history will repeat itself in this industry. It is good business on your part to invest your time, money and ability in *the franchise* that offers you not only immediate profits, but PERMANENT PROFITS. Kelvinator is *that franchise.* And we will gladly tell you why. Wire, write or phone to-day. KELVINATOR CORPORATION, *14245 Plymouth Road, Detroit, Michigan. Kelvinator of Canada, Ltd., London, Ont. Kelvinator Limited, London, England.*

(571)

Kelvinator

MERCHANDISING SECTION ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

Published Every Week by
BUSINESS NEWS PUBLISHING CO.
Also publishers of Refrigerated Food News (monthly) and Refrigeration Directory and Market Data Book (annual)
550 Maccabees Building, Woodward Ave. and Putnam St.
Detroit, Michigan. Telephones: Columbia 4242-4243-4244
Subscription Rates:
U. S. and Possessions and countries in Pan-American Postal Union: $3.00 per year; 2 years for $5.00
Canada: $6.00 per year (U. S. Money)
All Other Countries: $4.00 per year; 2 years for $7.00
Advertising Rates on Request

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Copyright, 1932, by Business News Publishing Co.

Vol. 6, No. 45, Serial No. 173, Part 1, July 13, 1932

Editorial Aims of the News

To encourage the development of the art.

To promote ethical practices in the business.

To foster friendly relations throughout the industry.

To provide a clearing house for new methods and ideas.

To broadcast the technical, commercial and personal news of the field.

Individuality vs Monotony

COMPETITION furnished by a large number of manufacturers who have tossed their hats into the refrigeration circle within the last several months is probably the major cause of most of the worries which are now besetting industry executives.

Apparently anybody can put together an electric refrigerator, and it seems that almost everybody wants to sell one. Since the decision in the Frigidaire-Absopure patent suit left the field wide open, it has been "come one, come all." And now that so many factories have been left idle as a result of the depression, "come all" seems to be the rule.

Pioneers Chagrined

Pioneer manufacturers in the industry may be inclined to feel somewhat chagrined at this turn in the industry's course; because it was through their expensive promotional activities, and their carefully worked out sales programs, that public acceptance for electric refrigeration has been built.

They can complain that just about the time they were in a position to write off their developmental costs and cash in on their market building efforts, they were prevented from so doing by a great influx of new manufacturers—who, because of the availability of ready-made parts, supplies, and men, had little developmental expense, and who could cut sales costs by taking advantage of the already created demand for electric refrigerators from established jobbers and retail merchants.

Indulgence in Pessimism

It is not hard to understand why there is an undercurrent of gossip to the effect that the industry is headed for the bow-wows, that it "is going the same way the radio industry did." On every side dealers are passing out of the picture. They cannot compete with the raft of newcomers who sell three or four boxes at greatly reduced prices to special friends and neighbors, and then call it a good year. (A more important reason for the demise of established refrigeration dealers this year is their inability to obtain aid for financing their sales.)

These dealers tell manufacturers' representatives that the only thing which interests the buyer is price; that prospects want to shop around for the best deal; and that unless the manufacturer can slash his price schedule still lower and increase his discounts, neither he nor they can survive. The sum total of these gloomy reports from the field may lead a manufacturing executive to believe that the refrigeration situation is indeed a mess.

Mere indulgence in pessimism, however, will not remedy the situation. After all, what evidence has the housewife that the refrigerator she purchases for less than $100 is not "just as good" as the one which sells for $200? Both look alike. Both are electric refrigerators. Both are likely to carry guarantees.

Mechanical Superiority

To be sure, the higher priced product may have a more familiar name—one which has been implanted in the prospect's memory by advertising. The cheaper model, however, may be sold by a merchant in whom he or she has confidence. In fact, if the stories told by dealers and sales representatives are to be given full credence, it would seem that a fairly large proportion of all the refrigerators being sold today are purchased from neighbors and close friends.

Elaborate efforts to sell the idea of mechanical superiority are being made today in an effort to combat the price argument. And the efforts have been, in a measure, somewhat successful. But the fact remains that they are *efforts*, and that they are extremely costly. For instance, methods of control—a popular point of "mechanical superiority"—are difficult to explain, both to housewives and to salesmen. And prospects hear so many different and conflicting explanations of mechanical differences that it is easy for them to become confused.

Styling the Product

Would it not be simpler to *style* the product, give it *individuality?* Instead of straining to convince a prospective buyer that one's product will work better than another which looks exactly like it, and for which equal claims of superiority are being made, would it not be easier to dress that product up so that the housewife can *see* the difference?

Put a new hat on the refrigerator. Any woman can understand that. Give it a new coat of paint. That's what she does to herself. Give it new lines, make it more fashionable. Automobiles are sold because of their style, their body-beautiful appeal. Why not refrigerators? Often the old bus may have forty or fifty thousand miles of good travel left in it when you trade it in on a new model. But the new model has style, and the pride of ownership appeal is strong enough to make us pay good money for that new style.

Specific Examples

Examples of electric refrigerator manufacturers who have achieved notable results with individualized products may be found in General Electric, Mayflower, and Leonard. While all might not agree that the G. E. Monitor Top is a work of art, one cannot help but conclude that its distinctive appearance, its easily recognizable trademark, has been an asset. Mayflower has introduced Colonial period design into its cabinets, and Trupar executives claim that this feature has been an important factor in building their present sales volume. Leonard's Len-a-Dor (foot-pedal door opener) distinguishes this box from its contemporaries in the eyes of all who see it; and partly for this reason Leonard sales have boomed this year.

The first automobiles were simply buggies propelled by gasoline engines. Likewise, the first electric refrigerators were simply ice boxes cooled by small refrigerating machines. Automobile design has progressed a long way from the buggy stage; but most electric refrigerator cabinets remain much the same in appearance.

Regaining Lost Ground

At present the tendency seems to be toward cheapening the cabinet, rather than investing heavily in tools and dies for new styles in cabinets. Now and then there are signs, however, that leading manufacturers are considering the adoption of entirely distinctive designs for their 1933 cabinets.

Perhaps Charles F. Kettering's argument that industry in general is suffering from production monotony—making too much of the same thing—may be applied to the electric refrigeration industry in particular. Instead of continuing to make what everybody else is making, possibly electric refrigeration manufacturers could regain lost ground by individualizing their products.

It's much easier to sell a difference which can be *seen*, than one which has to be *explained*.

Letters from Readers

'Analyzes Situation Splendidly'—Davidson

Electric Refrigeration Bureau
National Electric Light Association
Electric Building
Omaha, Nebraska
June 20, 1932

Editor:

On account of an accumulation of things, I did not have an opportunity to read your editorial, "Will the Bureau Live," until yesterday. You also refer to it in your letter of the 27th, which came this morning, and which I enjoyed reading.

Your editorial is excellent. It analyzes the Bureau situation splendidly, and I hope, as you do, that it will smoke out some comments from the manufacturers, dealers, utility executives, commercial men, and men connected with the Bureau nationally and locally, so that we may have some information that we may weigh in the balance to determine the value of the Bureau to the different ones who should be concerned, and to know what these people think about the continuance of the Bureau.

I wish to thank you again for your interest in the Bureau's affairs, particularly in the paramount subject about the Bureau's future, which must be given serious consideration in the next few months.

J. E. Davidson,
Chairman, Executive Committee.

'Hot News'

Trilling & Montague
N. W. Cor. 7th and Arch Sts.
Philadelphia

To Norge Dealers:

Electric Refrigeration News publishes the news of the industry "hot off the griddle," and through its columns you can keep posted up-to-date on new developments concerning Norge sales, and information pertaining to all important developments in electric refrigeration. Not only every Norge dealer, but every Norge dealer's salesman can derive much benefit from a subscription to Electric Refrigeration News.

This trade weekly is unquestionably the outstanding publication in the electric refrigeration field; and everyone interested in the sale of electric refrigeration should receive it regularly.

J. Lobel,
Sales and advertising manager.

Directory Valuable

United States Department of Commerce
Bureau of Foreign and
Domestic Commerce
Portland, Oregon
May 18, 1932.

Publisher:

The 1932 Refrigeration Directory and Market Data Book will form a valued addition to our files.

Frank Messenger,
District manager.

'Outstanding Paper'

Norge Dealer Bulletin

Electric Refrigeration News is the outstanding trade paper of the electric refrigeration industry.

We are sure you have found it full of stimulating information. It's really worthwhile.

Many dealers have expressed the wish to subscribe to Electric Refrigeration News and we have, therefore, secured from the publisher subscription blanks and they are attached. The pink sheet, in addition to being a subscription blank, gives some facts about Electric Refrigeration News which will be interesting to you and mentions other magazines electric refrigeration dealers find interesting.

Our only interest is to bring to your attention this worthwhile trade paper so that you may subscribe if you wish, and we hope you do.

Southern Equipment Co.,
San Antonio, Tex.

Endurance Test on Majestic Radio

Cauly Motor Co.
Plymouth, Pa.
June 17, 1932.

Editor:

We have been operating since Aug. 27, 1930, to the present writing a Majestic Radio and Speaker.

We are desirous of ascertaining if any one else is making such an Endurance Test and are wondering if you could help us in this respect.

Have you any records of any other such Endurance Test that has been operating longer than our set?

J. E. Piszczek.

More Kind Words from Foreign Lands

Imperial Chambers
Wilson Rd., Ballard Estate
Bombay
April 13, 1932.

Publisher:

We received some time ago the January 13 issue of Electric Refrigeration News, which we have kept on our reading table, and we look forward to receiving the more recent issues.

There should, of course, be a very good market in India for electric refrigeration and air conditioning equipment and there doubtless will be in those long and eagerly awaited times when business is going to improve.

I was particularly interested in an article in the January 13 issue of Electric Refrigeration News about air conditioning and cooling systems adopted by the Atchison, Topeka, Santa Fe Railroad on their transcontinental trains. This would be a great boon on Indian trains, which are extremely uncomfortable in the hot weather, and it is conceivable that they may eventually adopt air conditioning as standard equipment.

There is not much that can be done about it at present, however, as the railways are suffering from retrenchment like everyone else and even more so, and consider themselves lucky to have tracks and rolling stock in these times.

J. Bartlett Richards,
Trade commissioner.

American Legation
Prague, Czechoslovakia
April 12, 1932.

Publisher:

We have received our first copies of Electric Refrigeration News, which make a very interesting addition to our office library.

Sam E. Woods,
Assistant trade commissioner in charge.

'Splendid Style'

The Cramer-Krasselt Co.
Milwaukee
June 27, 1932.

Editor:

We find your handling excellent and want to compliment you very highly for the splendid style which you have developed. "The Expansion Valve" is perhaps the most interesting column that appears in *any trade newspaper.*

Lee Tracy.

On Our Bookshelves

"FRACTIONAL HORSEPOWER MOTORS"

Author: A. H. Avery. Publisher: Isaac Pitman & Sons, 2 W. 45th St., New York City. Pages: 150. Date of publication: 1931.

IN view of the large number of fractional horsepower motors in common use, this subject has been somewhat neglected in technical books. Now an English engineer has given it able treatment in a handbook-size volume, written chiefly about the design and construction aspects.

The author first explains that he is dealing only with motor sizes under 1 hp. which are designed to perform a regular commercial service, and that he is not concerned with toy motors.

Competition among manufacturers has imposed cost limitations which make the designer's problem one of economics as well as of electrical engineering, according to the first chapter.

Motor construction is the first topic to be treated at any length, an early section of the book describing various parts that typify standard construction among small motor manufacturers. Pictures and diagrams amplify the text material here, as elsewhere in the book.

A following chapter on design explains the several variable factors with which a designer works in choosing the most desirable combination of low cost, efficiency, endurance, performance, etc.—a problem that is further complicated by the necessity for designing parts that can be manufactured on production machinery.

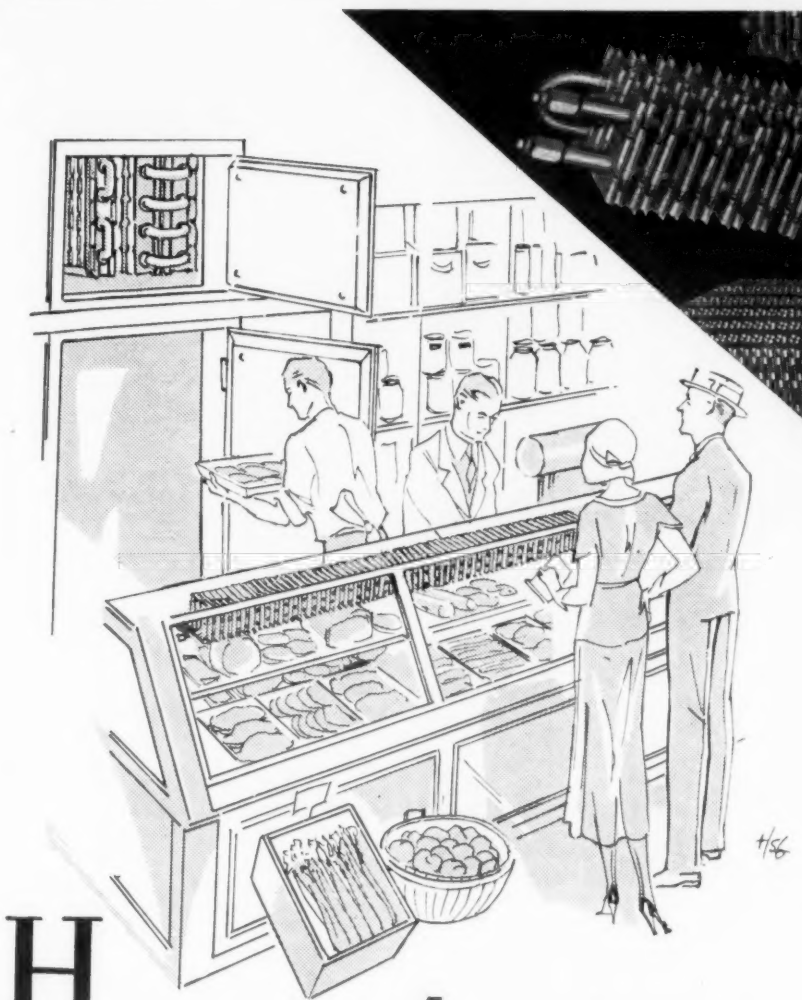
A goodly portion of the book is devoted to the consideration of the many elements affecting design—loading factors, armature and commutator conductors, heating effects, various types of losses and leakages, saturation, excitation and compounding. Each subject is tersely treated from a practical standpoint.

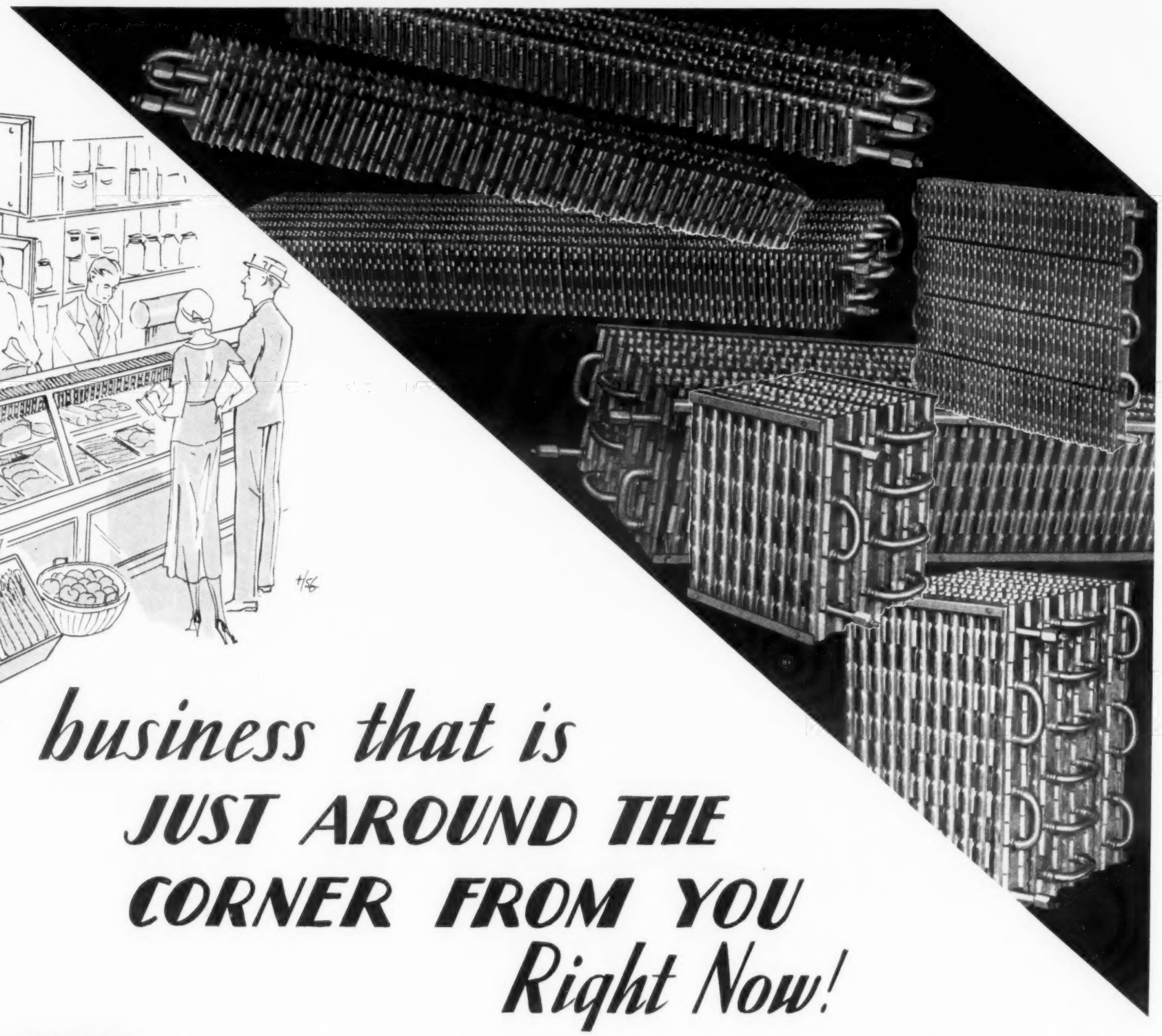
Universal motors come in next for a chapter of explanation, followed by a chapter on commutation which briefs some of the fundamental theory of electric motors.

Under "Insulating Materials" the author tells about high voltage tests that are imposed on small motors, and outlines advantages and disadvantages of the most common kinds of insulations used in motor windings and terminal blocks.

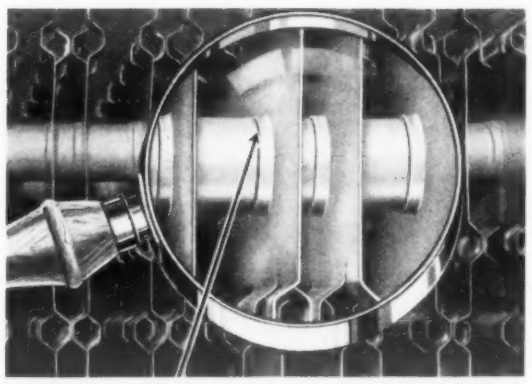
Testing methods such as the manufacturer or repair shop employ are subsequently described, as well as are methods of checking performance, charting characteristics, etc.

The final chapter is headed "Fault Location and Repairs," giving typical breakdowns and faults, and suggesting how they may be located.

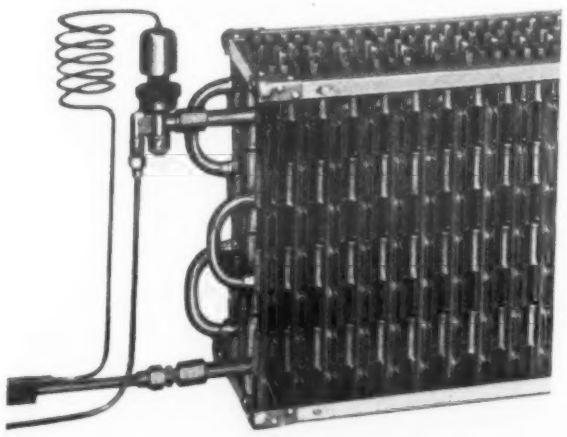




Here's business that is JUST AROUND THE CORNER FROM YOU Right Now!



Fedders Metal-to-Metal Bond Between *Copper Fins and Tubes* gives highest heat transfer efficiency, thanks to an exclusive Fedders fusing process.



Typical installation of Fedders Thermostatic Expansion Valve on NON FROST Evaporator making a complete *"LOW SIDE."*

THE demand for electric refrigeration for commercial use is opening the door to large and profitable sales RIGHT NOW. Groceries, meat markets, hotels, clubs, restaurants, soda fountains, dairies, are just a few of the many commercial places where electric refrigeration is being installed.

The complete line of Fedders NON-FROST Commercial Evaporators equips you to go after every sale.

With Fedders Thermostatic Expansion Valves, you have a complete "low side" made up of related units built by a single manufacturer whose reputation for QUALITY has resulted in Fedders equipment being accepted as "THE STANDARD."

COPPER, long acknowledged as the most efficient heat transfer metal, is used for *Fins and Tubes* in all Fedders evaporators.

Exclusive processes developed during years of research by Fedders engineers give an absolutely FUSED METAL-TO-METAL BOND between tubes and fins providing highest thermal efficiency for heat transfer. It results in practically one-piece construction with the permanent efficiency of prime surface.

The useful new Fedders CATALOG DATA BOOK makes it easy for you to select the right units for any job. Write Dep't. N-72 for a copy and complete information on the commercial refrigeration prospects that are just around the corner and across the street from you RIGHT NOW. The coupon is for your convenience.

FEDDERS MANUFACTURING CO.

57 Tonawanda Street, Buffalo, N. Y.

EXPORT DIVISION: 116 Broad Street, New York City

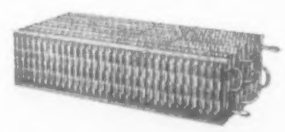
PACIFIC COAST REPRESENTATIVES:

Refrigeration Products, Ltd., 1110 North Alameda St., Los Angeles, Cal.
1185 Mission St., San Francisco, Cal.

Fedders Appliances are fully patented and will be protected

There are over four hundred standard sizes of Fedders Non-Frost Commercial Evaporators. Exterior finish, ... Fedders Silver-Satin!

FEDDERS
non-frost
COMMERCIAL
EVAPORATORS



This new Fedders Data Book is more than a Catalog, it is a useful hand-book on Commercial Refrigeration. It gives you complete workable information that will help you get this worth while business. Your copy is ready and waiting for you, send for it now.

FEDDERS MANUFACTURING CO., DEPT. N-72
57 Tonawanda St., Buffalo, N. Y.

Kindly send me copies of your latest bulletins on:

☐ Non-Frost Evaporators ☐ Flooded Cooling Units
☐ Expansion Valves
☐ I am interested in knowing more about the sales possibilities of Commercial Refrigeration.

NAME _____
FIRM _____
ADDRESS _____

FEDDERS

ALBUM TELLS STORY OF AIR CONDITIONERS

DAYTON—A "photograph album" for the graphic presentation of Frigidaire air conditioning apparatus to the prospective user has been designed for the use of Frigidaire salesmen and is now available.

Fitted with a black and silver Fabrikoid cover, the book contains 40 pages of illustrations showing the uses of Frigidaire air conditioners in various settings.

An accompanying booklet, "How to Use the Air Conditioning Album," states that the album was designed "so that any one who even glances casually through the book will carry away a favorable impression." The theory back of it is that, accompanied by a sales talk, the album will aid in leaving a definite impression in the prospect's mind long after the spoken words are forgotten.

Vocabulary for Salesmen

The booklet reviews each page and each picture step by step for the air conditioning salesman, and adds to its value by giving him a vocabulary of descriptive words with which to bring a reaction into the minds of his prospects.

"Hot, sticky nights," are contrasted with "cool, refreshing air." "Heat-soaked offices" appear in the same paragraphs with "inviting coolness."

Full paragraphs which may be "lifted" by the salesman are given, as the following example shows:

"Just as you do many things in winter to secure physical comfort, Mr. Prospect, you must take steps in the summer, too, in order to secure a degree of comfort.

"There are the hot, sweltering days when you naturally take the shady side of the street . . . when you turn on electric fans, wear lighter clothing, eat light foods . . . in fact, try every means possible to escape the heat.

"All these things, however, only bring you a limited measure of comfort. Furthermore, you haven't time to indulge in the various forms of recreation that might bring you into contact with the cooling breezes."

Aggressive Sales Arguments

A summary of this first section, which shows good examples of "negative selling," is given, telling the salesman to collect additional data from local newspapers, covering intense heat waves of the previous summer.

Aggressive positive selling arguments follow:

"Mr. Prospect, imagine, if you will, the cool, comfortable office you can have here this summer with Frigidaire air conditioning equipment. All you will need to do is to turn the switch, and instantly your office will be flooded with cool, refreshing air that will permit you to keep mentally alert all through the day."

And again, "Mr. Prospect, with a Frigidaire air conditioner in your bedroom, you can secure priceless hours of undisturbed sleep, no matter how stifling and humid the outside air may be. Each morning you will awaken refreshed . . . ready to take up the day's work with your vitality renewed."

Heating in Winter

The first pictures show the uses of heating equipment in making winter comfort. Three indoor pictures—an office, a drawing room, a nursery—show heating radiators in the background. A fourth picture shows a blizzard scene, with heavily clothed people walking through it.

The next pictures show temporary methods of gaining relief from the heat. A group of photographs of vacation scenes is given, the next pages contrasting with pictures of individuals uncomfortable from the heat. A man seated at his desk is shown with sleeves rolled up, a frown on his face. A home scene shows man and wife, fans in hand, sipping cold drinks. A man is seen sitting on the side of his bed, while a clock shows the hour, 3:30 a. m.

The following section shows adaptations of Frigidaire equipment. A Frigidaire-cooled office and conference room (with occupants efficient because of the cooled air); two scenes in the home (relaxation and comfort), are included.

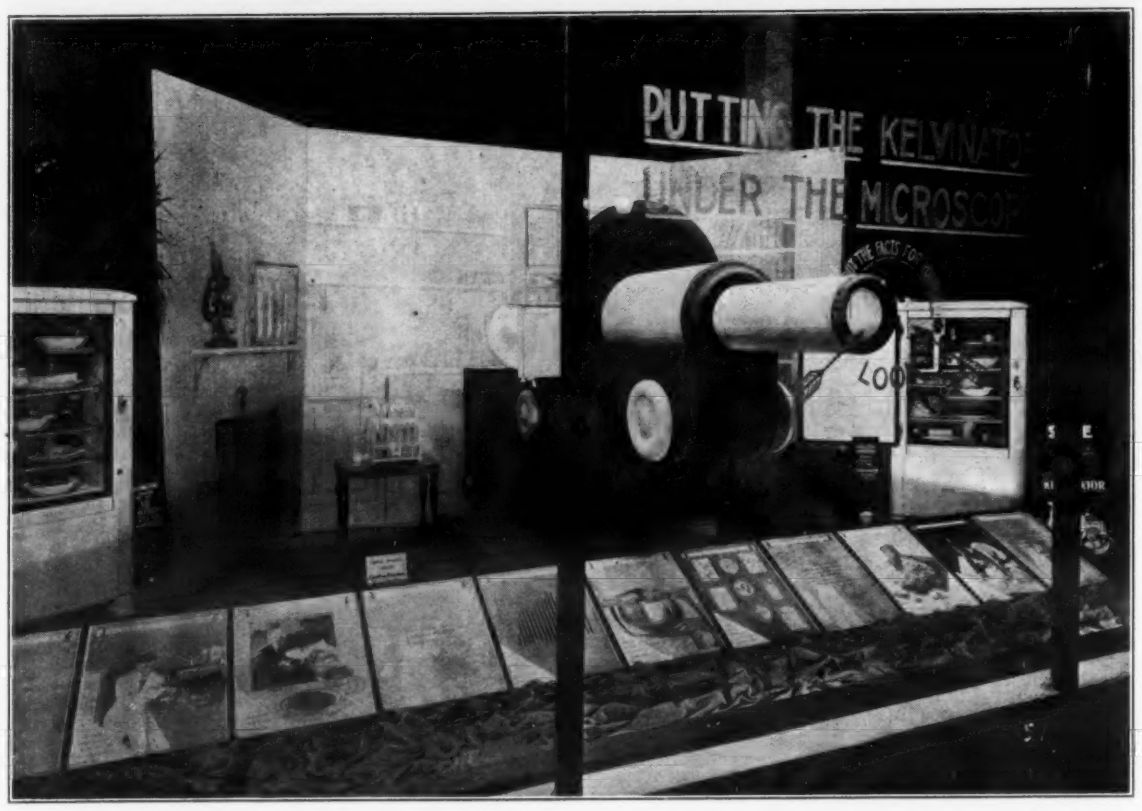
The three requisites of body comfort in summer—circulation of the air; cooling of the air; dehumidification of the air—are made the subject of a few pages, with a diagram showing how Frigidaire air conditioning equipment does all these things.

Next comes a section for the salesman of commercial air conditioning applications, called "air conditioning for profit."

Illustrations in this commercial section portray the fact that extreme temperatures both in summer and winter retard business. Summer "sales" (visualized through the photograph of a heap of newspaper advertisement clippings), are conducted by every store because of this fact, the album points out.

In restaurants, fewer patrons are served lighter meals during the summer, another illustration shows. Other pictures show varied applications of commercial air conditioning, such as theaters, barber shops, beauty parlors, radio stations, dress shops, professional offices, and candy shops.

Microscopic Inspection of Kelvinators



A Kelvinator was literally put under a microscope in this window display created by E. H. Lindsay, St. Joseph Railway, Light, Heat & Power Co. The giant microscope focusses on pictures showing Kelvinator features.

How To Promote Refrigerator Sales

As Told By C. T. Graham, President, Copeland Refrigeration Co., Detroit

By Phil B. Redeker

DETROIT—Is the distributor or branch office manager finding that he has to change his selling and promotional tactics during the 1932 selling season to meet changed sales resistance reactions on the part of the prospect?

C. T. Graham, president of the Copeland Refrigeration Co. of Detroit, branch distributor of Copeland refrigerators for the state of Michigan, for one, has discovered that his salesmen are facing many new problems.

He has met the problem by resorting to a new type of sales promotional activity, which has a very definite end in view.

Two New Difficulties

Briefly stated, Mr. Graham has found so far this year that his salesmen are running into two new difficulties in going out to sell new domestic refrigerators.

These are: (1) an almost 100 per cent tendency on the part of the prospect to "shop around," before buying or even giving serious consideration to one make, thus eliminating all of the easy sales which were once a great factor in building up a salesman's morale and keeping him enthusiastic; (2) the growth of a more antagonistic or at least "closed door" attitude to canvassers, which has made door-to-door activity on the part of salesmen unprofitable in all but a few selected territories.

Tendency to Shop Around

The marked increase in the tendency to "shop around" on the part of prospective purchasers may be a reflection of the times, and is perhaps influenced by the influx of low-priced equipment in the refrigeration field, the Copeland branch manager thinks.

"People are not looking for price alone; they are definitely quality-conscious," Graham asserts. "For this reason, the introduction of low prices may be defeating its own end, as we have found that the modern buyer will often be inclined to scorn the product advertised at the cheapest price as one probably made with inferior materials.

"But what the prospect is looking for, is a quality refrigerator at a bargain price, and in many cases he will look around, price everything, and sometimes even wait after he has made up his mind, hoping for another price slash."

Uses Patterson's Philosophy

Taking his cue from the philosophy of John Patterson, the late head of the National Cash Register Co. and often called "the father of specialty selling," for whom he once worked, Graham is bending every effort to get the idea and the story of Copeland across before his competitors arrive on the scene.

He is using a "spot exposure" method of getting the Copeland refrigerator before the public. He has placed Copeland de luxe models in theater foyers, hotel lobbies, restaurant entry-ways, popular retail food stores, and other places where the public is likely to pass or gather.

This has been done both in Detroit and in the smaller cities throughout the state of Michigan, for this new "bargain hunting" attitude is found in smaller cities as well as the metropolitan area, Graham avers.

In addition to getting the actual product before the eyes of a good percentage of the public, this method of display is more likely to arouse the curiosity of people to the point where they will "tinker" with the refrigerator, such as opening the doors, and pulling out the ice cube trays, than is the display on a salesroom floor.

The prospect who just happens into a showroom, Graham points out, is often likely to refrain from evincing too great an interest in the product by giving it a thorough inspection, for fear that he will be high-pressured.

Displays Bring Sales

In a few cases this display of refrigerators in places where the public is served or gathers has resulted in direct sales of the de luxe models shown. The display is usually made as a gesture of courtesy on the part of the establishment cooperating, although in the case of the food market there may be a tie-in with a special sale.

Another stunt which has focused the public's attention on Copeland refrigerators has been the use of a human "robot" or mechanical man who performs in the windows of showrooms or places selected because of their strategic locations, in which Copeland refrigerators are displayed.

The mechanized actions of this device or individual is always an attention-getter, and at an appropriate moment the robot calls attention to the Copeland refrigerator and through motions invites the crowd inside to inspect the features of the product.

Use of Motor Caravan

Another stunt which Graham found to be effective in impressing the Copeland product on the minds of the populace was the use of a motor caravan carrying Copeland refrigerators, banners, and other promotion paraphernalia, which went on a tour of the state during the early part of this year.

Led by a truck carrying a loud-speaker which drew crowds to the sidewalks in many of the towns through which it passed, the caravan obviously made an impression upon many people, Graham states, for in many instances of later date when a salesman called upon a prospect, he was immediately identified, upon revealing the name of his company, with "the parade of the refrigerators."

Floats in Local Parades

Relative to the subject of parades, Graham states that he has uncovered a good sales promotion stunt in entering a Copeland float in parades given in connection with some local event or celebration held in small towns throughout the state.

Practically the entire populace turns out for these parades, so that 100 per cent "exposures" can be made, and the entrance of the float is a good-will builder with the more influential members of the citizenry, Graham points out.

Under these changed conditions, a great deal more attention must be given to the preparation and placement of advertising, Graham believes. The advertiser should test his copy, in competition with many types of advertised products, to make sure that it will get reading attention from newspaper subscribers. He relates a method used by the late John Patterson to test his advertising copy. Patterson would take a piece of copy to his barber, or butcher, and if these types of individuals would read it, and express interest, he was ready to use it.

Detroit newspapers have tried two stunts this year which have given definite reader appeal to copy placed by refrigerator distributors. One was the inclusion of a special refrigeration supplement in one of the Sunday editions, which contained editorial material concerning the various companies and distributors, as well as advertising, says Graham.

Rotogravure Advertising

More recently, a Sunday edition of one of the Detroit metropolitan papers carried a special rotogravure section in which the use of refrigerators, automobiles, and other high-class appliances in the homes of Detroit's "society" people was depicted. This special section, with established society matrons and beautiful young "debs" posed with Copeland models, had more of a "spotlighting" effect than other refrigeration advertising copy produced in Detroit this year, says Graham.

Turning to the question of the difficulties encountered in cold canvassing, Graham declares that with so many new appliance companies sending men out to canvass, and the resulting increase in resistance to "front door" canvassing, he has advised his salesmen to try the back door when working on a "cold canvass" basis.

Back Door Canvassing

"We have joined forces with the milkman and the grocery man," Graham laughs, "but it might be well to note that the milkman and the groceryman, and even the food peddler, are generally welcome at the rear entrance. The refrigeration salesman, well enough dressed not to be taken for a beggar, sometimes finds a better reception at the back door than he does at the front."

The current difficulties in cold canvassing have thrown greater emphasis upon "using the user," the Copeland branch head states.

'Using the User'

"Under present conditions, the 'using the user' slogan can't be allowed to just be a nice epigram hanging on the bulletin board," says Graham. "The salesman must spend definite periods in renewing his contact with the user.

"With bargain hunting so prevalent, much of the buying is being done 'down the alley,' meaning, especially in the case of fairly large-sized orders, that a friend or business associate of the buyer will tip off a friendly distributor, in the hopes of perhaps obtaining a discount or some favor for his friend."

A more widespread application of the Copeland User's Bond is being advocated. This document, in form very similar to a gold bond with 10 coupons, is sent to every user. On each coupon there is a place for the name and address of one prospect whom the user is willing to classify as being an immediate prospect for a refrigerator.

For each name submitted which results in a sale, the user receives $5. So that the user will not be in any way embarrassed, the use of his name in contacting a lead which he submits is made optional.

Must Make Friends

"With competition as keen as it is, the salesman who gets the jump on his competitors, who is prompt in following up his leads, will generally win out," declares the president of the Detroit Copeland branch. "He must cultivate the housewife and gain her friendship so that she may be easily induced to visit a showroom.

"While friendship-making has always been an important piece of selling tactics, it is of primary importance today, where the average housewife may meet 10 or 15 specialty salesmen in a day.

"The man with experience in some line of selling, not necessarily refrigeration, who is willing to work 10, 12, and 14 hours a day, makes the best kind of salesman under these conditions. The old 'high-pressure' type who knocked off enough sales by working two or three hours a day will find it pretty hard to make a living in the refrigeration game unless he changes his tactics."

In small towns and rural communities the canvassing problem is not quite so acute, says Graham, but the bargain hunting tendency has manifested itself as much as it has in the metropolitan area, and the dealer is making widespread use of stunts to get Copeland models displayed to all who may be prospects.

Service Men Get Prospects

The service department has been pressed into activity as a medium for getting prospects through contacting users. Sales meetings have been held for service men throughout the state, in which they learn proper ways to approach users on the matter of getting names of prospects.

All service men carry the User's Bond, which gives them a talking point.

"The service man, because he comes into the home to help the housewife out of some difficulty, is always welcome," Graham comments. "And because he is not trying to sell her something, she will generally be glad to talk with him if he is at all adept at drawing her out in a conversational way."

EDISON G. E. WILL EQUIP GALLEYS OF U. S. CRUISERS

CHICAGO—Edison General Electric Appliance Co., Inc., has just been awarded contracts for electric galley equipment for a number of mercantile vessels and U. S. Navy cruisers.

Some of the vessels being equipped are: U. S. S. New Orleans, U. S. S Minneapolis, U. S. S. San Francisco, and U. S. S. Astoria, under construction at Brooklyn, Philadelphia, Mare Island and Puget Sound Navy Yards; U. S. S. Ranger, new aircraft carrier being built in the yards of the Newport News Shipbuilding and Dry Dock Co.; U. S. S Tuscaloosa, in the yards of the New York Shipbuilding Co.; four Scantic Line ships of the Moore and McCormick Co.; two new ships, S. S. Manhattan and a sister ship, of the United States Lines.

DIVIDEND DECLARED ON WESTINGHOUSE PREFERRED

EAST PITTSBURGH, Pa.—The regular quarterly dividend of 87½ cents a share on preferred stock of the Westinghouse Electric & Mfg. Co. has been declared, and the quarterly dividend of 25 cents on common stock omitted for this period by the directors of the company.

The statement of the directors showed that in view of the earnings situation of the company, cash resources should not be further reduced by payment of any dividend on the common stock.

The company has no outstanding bonds or bank loans, it was stated, and is in sound financial condition as to cash and net quick assets.

PUERTO RICO DISTRIBUTOR NEARS CAMPAIGN GOAL

SAN JUAN, Puerto Rico—Aiming at a goal of 100 Kelvinator sales in 40 days, the Puerto Rico Railway Light & Power Co., Kelvinator distributor here, had sold 86 of the 100 with half of the contest yet to go.

William L. Zwigard is superintendent of merchandising for the firm, and Frederick Krug is general manager. P. W. Raymer is new business manager.

EUROPEAN FRIGIDAIRE HEAD VISITS DAYTON FACTORY

DAYTON—G. D. Riedel, European manager of Frigidaire Corp., is paying his annual visit to the factory. Mr. Riedel's headquarters are in Paris.

REFRIGERATION SALES CITED BY COLLIER'S

THE record for mechanical refrigeration sales through the period of the depression is mentioned by *Collier's* in a recent editorial, "Count Your Change," which catalogs reasons why America is not so poor as she thinks she is.

The editorial makes no controversial statements, but lists a long series of facts which have an optimistic ring. Here they are:

"America's mutual savings bank deposits are $1,233,000,000 higher than they were at the peak of the boom three years ago.

"Total bank savings today exceed $29,000,000,000, equal to more than $1,000 for every family in the land.

"Savings depositors number 52,000,000, nearly two per family.

"The number of Americans owning stock has increased almost 40 per cent since 1929.

Increase in Stockholders

"A group of 102 companies which had 5,539,036 stockholders at the end of the boom year had 7,675,143 stockholders at the beginning of this year.

"One company alone today has over 665,000 stockholders, a gain of more than 195,000 since the boom. This company (American Telephone & Telegraph) has assets exceeding $3,200,000,000.

"No other nation on the face of the earth can show such widespread ownership of money and stocks.

"Our total stock of gold is $4,000,000,000. No other country ever posssesed so much. Britain, for example, has only $588,000,000.

"Currency in circulation aggregates $5,464,000,000, or $700,000,000 more than in the boom.

"A recent offering of $450,000,000 of United States Treasury securities elicited subscriptions totaling $4,196,296,700 — more than nine times the amount offered.

Insurance Policies

"Last year $16,500,000,000 worth of new life insurance was written.

"Total insurance now carried is estimated at $109,000,000,000, or not far short of $1,000 for every man, woman and child in the United States.

"Policies in force total 127,800,000.

"One company alone (Metropolitan), has in force many more policies (44,520,810), than there are families in America.

"Such safeguard, such security is enjoyed by the people of no other nation in the world.

"Our total national wealth, estimated at $329,700,000,000, is greater than that of a dozen Continental European countries combined.

"The income of the American people comfortably exceeds $1,000,000,000 a week.

"The per capita income here is far greater than in any other land.

"There are still six or seven persons gainfully employed for every person idle.

Foreign Debts

"Foreigners owe American investors approximately $18,000,000,000. In addition, foreign governments owe our government $7,000,000,000 and we are still selling abroad more than we are buying.

"No fewer than 25,800,000 automobiles are owned by Americans—almost one for every family.

"This total is almost three times the number owned by all the rest of the world.

"Americans possess far more telephones (19,500,000) than all other countries put together.

"Radios continue to multiply. The latest authoritative computation puts the total at over 16,545,000, representing an investment of more than $1,600,000,000, also a record unapproached by any other people.

Refrigerators in Use

"How many new domestic mechanical refrigerators have been bought, would you guess? A grand total of fully 3,750,000, at an estimated expenditure approaching $2,000,000,000. And most of these have been installed in the last three years. In no other part of the globe do half as many homes enjoy such a luxury—Americans are rapidly coming to regard it as a necessity.

"America has more home owners than any other nation.

"A recent survey of 29 typical small towns revealed that 71 per cent of the inhabitants owned their homes, that 88 per cent had electric light, 72 per cent had baths, 51 per cent had electric washers, 55 per cent had radios, 41 per cent had vacuum cleaners.

"There are more families in America than in any other land that can afford to and do send their children to high school and college.

"In no other land do so many average families have the means to enjoy foreign travel.

Expansion of Air Travel

"Expansion in airplane travel—the most costly of all common forms of overland transportation — has been greater here than abroad during recent times.

"The theater of the masses, the movie, still attracts a weekly average attendance of 75,000,000.

"Our so-called national 'luxury' bill is still away up in the billions a year.

"It took a billion and a quarter pounds of candy to satisfy our sweet tooth in 1931—no decrease from the 1929 total.

"The percentage of our agricultural population who, despite deflation, are acquiring domestic comforts, conveniences, labor-saving devices, improved machinery, the use of better roads, is constantly increasing.

"Today more than 700,000 farms are electrified, representing an increase of 400 per cent in eight years, and the total is being swelled rapidly.

Manual Labor Decreased

"In industrial communities hard manual toil is being steadily abolished by the introduction of machinery. Each American worker now has at his command five horsepower, a record not even remotely approached outside our boundaries.

"The average working-day a generation ago was 10 to 12 hours. The standard in this generation is 8 hours, with the trend running towards a still shorter work-day.

"The work-week used to consist of 6 (even 7) days. Now it is 5½ days, with the 5-day week coming into vogue.

"America has always recovered from periods of depression and pressed forward to new heights of prosperity.

"Never in the past was America so well equipped as it is today to resume an epochal forward march. Not only have we changed from a debtor nation to the greatest creditor nation on earth, not only have we vaster national wealth, not only have we an unprecedented supply of gold, but we are richer in experience, richer in inventive brains, richer in scientific knowledge, richer in machinery, richer in productive facilities, richer in managerial skill, richer in discovered mineral and oil resources, richer in transportation facilities by land and air and water, richer in every material wealth-creating product and process, richer in craftsmanship, richer in everything."

On Michigan Air Tour

This plane advertising Gibson electric refrigerators is one of 40 now making a tour of Michigan cities. The plane is met by dealers in each city.

100 ATTEND SALES MEETING OF COPELAND DISTRIBUTOR

COLUMBUS, Ohio—Copeland electric refrigerator dealers and salesmen numbering 100 from 26 counties of central and southern Ohio attended a sales meeting last week at the Southern Hotel concluding with a banquet at night.

The Good Housekeeping Shop, 246 S. High St., of which F. P. Boyland is president and R. F. Boyland is sales manager, is distributor for the 26 counties.

The meeting was presided over by R. F. Boyland. W. D. McElhinny, vice president of the Copeland Products Corp., Mt. Clemens, Mich., addressed the meeting.

R. F. Boyland stated that his territory sales have increased 50 per cent over the same period last year. In addition to the Good Housekeeping Shop, the Emswiler Co., 89 N. Third St., and W. E. Heskett Co., 507 N. High St., are Columbus dealers.

NORGE DISTRIBUTOR BEATS 1931 RECORD IN 4 MONTHS

BOSTON — Sales by the General Equipment Corp., Norge distributor in New England, were as great in volume during the first four months of 1932 as they were during the entire year of 1931.

This statement was made at a meeting of 250 Norge dealers here last week, by John G. Knapp, vice president in charge of sales of Norge Corp.

John G. Waddell, president of General Equipment Corp., and Glenn O'Harra, eastern sales manager, explained the summer campaign and contest which starts July 11 and closes Aug. 27.

2 WESTINGHOUSE SALESMEN GET 16 SALES IN WEEK

ST. LOUIS—George Schultz and E. Dieboll, Westinghouse salesmen for the Arthur R. Lindburg Co., each accumulated 16 sales in the first week of a sales contest which is now in full swing.

Four groups of 15 men each have been organized by the distributor. Suits of clothes are to be awarded to the winning group. The leading man will also receive prizes and cash valued at more than $200. The contest is a tie-in with the national "Lucky 7" contest being held by the Westinghouse refrigeration division.

Mr. Schultz heads the sales organization with 63 individual domestic sales to June 30, 1932, this year.

CARLOAD OF MAJESTICS SENT TO WATERLOO DEALER

WATERLOO, Iowa—An entire carload of Majestic refrigerators was shipped last week to Nichols & Gates, dealer here, according to information from Herbert Hieb, distributor.

Receipt of the shipment of refrigerators was announced by the firm in a large advertisement which was left at the doors of Waterloo homes. The advertisement featured the Majestic $99.50 price leader.

KANSAS FIRM LAUNCHES GIBSON CAMPAIGN

KANSAS CITY, Kan.—A special newspaper advertising campaign for Gibson electric refrigerators is being waged by the Townley Metal and Hardware Co., according to Webster W. Townley, vice president.

A series of Gibson advertisements is being carried by the Kansas City *Kansan*, with a tie-in by dealers in Kansas territory near here.

Rowboat Delivers G. E. Unit

NORWALK, Conn.—Onl rowboats ply between the mainland and Sheffield Island, half a mile offshore on Long Island Sound, so when the Rex Cole branch here, sold a General Electric refrigerator to the island's caretaker, Eric Will, a rowboat transported it.

The Monitor Top unit was delivered in its original crate, according to L. K. Almy, manager of the Rex Cole branch, but the cabinet was removed from its crate and delivered in a padded cover.

Despite the small boats and the heavy cabinet, the passage was made without mishap, and the refrigerator is now being operated on a 110-volt DC electric power plant located on the island.

DISTRIBUTOR SELLS 36 CARS OF MAJESTICS IN 90 DAYS

LOS ANGELES—Thirty-six full carloads of Majestic refrigerators have been sold by Ungar and Watson, distributor in southern California, in the last 90 days, despite unusually cool weather, according to W. F. Wilson, general manager.

Ungar & Watson was the winner of first prize in group B of Majestic's recent "contest without a name" for distributors.

Last year the organization sold about 6,000 Majestic refrigerators, and Wilson believes that this year dealers are beginning to reap the benefits of sales made during that season.

"Every Majestic refrigerator sold can be depended on to bring in prospects for two or three more refrigerators," he avers.

HOT WEATHER BRINGS CONDITIONER SALES

TAMPA, Fla.—Florida weather is hot in June and July. Oppressed by the heat, Valentin Garcia, Frigidaire salesman of 7 years standing, recently decided that air conditioning equipment was what he wished to sell.

Choosing some particularly "hot spots," cigar factories, he almost immediately landed orders for dehumidifying equipment as follows: Jose Escalante & Co., a ¾-hp. dehumidifier with humitrol and magnetic contactor; Bustillo Bros. & Diaz, ADF 275 dehumidifier, ¾-hp.; Garcia Perfecto & Bros., ¾-hp. dehumidifier with humitrol and switch.

Change Fields

About the time these orders were being delivered, E. E. Bocock, from Frigidaire headquarters, convinced Garcia that dairy installations were the important activity.

Reluctant to give up his air conditioning activities, he nevertheless followed Bocock's advice, and in three days had netted the following Frigidaire sales, totalling $10,000:

Dairy Installations

Two Brothers Dairy, A-5150 compressor; Celestino Gonzales, of South Tampa Dairy, A-4100 compressor, DX coil, brine tank, TS valve, aerator and pump; G. Guagliardo & Son, Florida Dairy, 2 W-6150 compressors, 2 brine tanks, 2 copper tube coils, 4 TS valves; Lauriano Rodriguez, Spanish Dairy, A-4100 compressor, TS valve, expansion coil, brine tank, brine pump and motor, aerator.

Joe Capitano, Family Dairy, 2 W-6150 compressors, 2 brine tanks, 1 Penn switch, 4 TS valves; Columbia restaurant, 2 T-250 water coolers, a 4-hole ice cream cabinet; 2 DX-1866 coils; 1 DX-15 coil, 1 DX-19 coil; 1 FW-4150 compressor; 1 W-475 compressor; 1 W-250 compressor; 3 FTS expansion valves; 1 snap action valve.

A NEW PROFIT OPPORTUNITY AIR CONDITIONING

McCORD CONVECTORS

for COOLING, HEATING *and* DEHUMIDIFYING

The McCord convector system is designed for water circulation. When a mechanical system is used for cooling the water a smaller size machine can be used than if the refrigerant were circulated directly through the unit. This is because the demand or running time on the convector is usually only a few hours during the day. The ice machine may run a greater number of hours building up ice on the coils in the water tank supplying the added capacity needed during the peak periods of convector operating cycle.

Catalog and technical data on request.

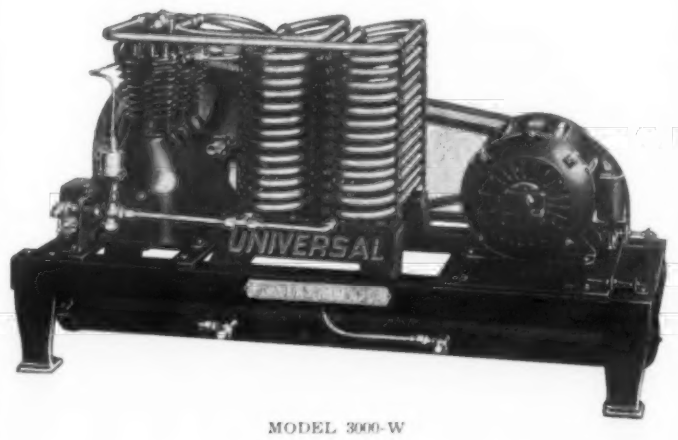
McCORD RADIATOR & MFG. CO., DETROIT

Universal Coolers

COVER EVERY PHASE OF COMMERCIAL REFRIGERATION

UNIVERSAL Dealers occupy an enviable position in the commercial field due to the completeness, recognized economy and proven ability of the Universal Line to "stand up" on the job. The line includes milk coolers, water coolers, coils of every size and condensing units ranging from a 1-6 H. P. unit to the 3 H. P. unit, shown below, which is especially adapted to air conditioning work and is capable of producing 3 tons of refrigeration.

Complete details upon request



MODEL 3000-W

Universal Cooler Corp.

Detroit, Mich. - - Brantford, Ont.

RACKLIFFE APPOINTS KELVINATOR DEALERS

NEW BRITAIN, Conn.—Eleven new Kelvinator dealers have been appointed by Rackliffe Bros. Co., Inc., distributor in this territory. These additions bring the Rackliffe dealer total to 76.

F. C. Henderson Co., Boston, and Brown Thomson Co., Hartford, Conn., department stores, have been appointed as outlets for Kelvinator.

Other new dealers are: New Britain Store Fixture Co., New Britain, Conn.; Caplan Electric & Radio Store, Wallingford, Conn.; Webster & Southbridge Gas & Electric Co., Webster, Mass.; Clinton Lumber & Coal Co., Clinton, Conn.; Bristol Lumber Co., Bristol, Conn.

Jayar, Inc., Springfield, Mass.; John C. MacInnes Co., Worcester, Mass.; Modern Electric Appliance Store, Ware, Mass.; Easy Washing Machine Sales Co., Greenfield, Mass. (for the entire Franklin County territory).

TRIP CONTEST SPONSORED BY GIBSON DISTRIBUTOR

BALTIMORE—A free trip to New York was offered by the Joseph M. Zamoiski Co., Gibson electric refrigerator distributor, to the winner of a recent slogan contest.

Winning slogan in the contest was "The Gibson Way is the Way of Today," entered by Miss Anna Meyer. Miss Meyer announced that the trip would be part of her honeymoon, as she will shortly become Mrs. Louis Feinstein.

Baltimore dealers participating in the slogan contest included Hecht's, M. Shaivitz & Sons, Wm. Kaufman & Co., and Hecht Bros.

SEVEN SALESMEN QUALIFY FOR FRIGID AIRMEN'S CLUB

BALTIMORE—Seven air conditioning salesmen of the Baltimore-Washington district of Frigidaire Sales Corp. have qualified as Frigid Airmen, according to announcement here, and have been awarded silver lapel pins.

The men are H. L. Jones, J. Kaiser, K. W. Inge, C. E. Loops, E. E. Rothe, P. W. Budworth and H. A. Spott. Membership in Frigid Airmen's club is limited to those who have made outstanding sales of air conditioning equipment.

COMMERCIAL MAN ENDS G. E. 'WAR' WITH BIG SALE

COLUMBUS, Ohio—Spencer H. Davies ended his part of the General Electric Monitor Top war campaign with a resounding bang.

A General Electric commercial salesman for Bard & Barger, Inc., distributor here, only since March 1 of this year, Mr. Davies sold and installed three D-124 display cases just as the final shot in the sales campaign was fired.

The cases were installed in the Oak Street Market, 35-year-old firm headed by H. D. Foster and Harry Foster.

Balsam-Wool
Sealed Slabs
ODORLESS
SANITARY
Completely satisfactory Refrigerator Insulation

WOOD CONVERSION COMPANY
Industrial Sales Offices:
CHICAGO, 360 N. MICHIGAN AVE.
New York, 3107 Chanin Bldg;
Detroit, 320 Stephenson Bldg.

Ful-CO Refrigerator COVERS

Insure deliveries without scratched or broken enamel. Write for prices.

Fulton Bag & Cotton Mills

How To Get Prospects

As Told By W. L. Burton of G. E. Distributorship

By Phil B. Redeker

ST. LOUIS—James & Co., distributor for General Electric refrigerators, will drive hard on the cold canvass method of selling this year, states W. L. Burton, secretary of the company and head of the distributor's retail operations.

Sales heads of this refrigeration-selling firm are wholeheartedly in favor of the "25 plan," calling for 25 canvass calls daily, which plan was inaugurated by the refrigeration department of the General Electri cCo. early this year. Their belier in this plan is not their only reason for stressing the cold canvass; figures which they have kept on salesmen's activity show that 40 per cent of their business this year is coming from the cold canvass, as compared with 8 per cent last year.

Monthly Sales Records

Monthly records are maintained on every sale as to the manner in which the sale was made, the income class which did the buying, and other pertinent information. The classifications of this "questionnaire" on sales are as follows:

1. Manner in which contact was made (floor, canvass, user, etc.).
2. "Age" of prospect closed (length of time it took to make sale).
3. Type of residence in which it was installed (family home, duplex, etc.).
4. Occupation of individual purchasing the refrigerator.

Aid in Sales Direction

Records kept along such lines enable the sales manager, and the eight sales supervisors, to give their salesmen "intelligent direction."

To the salesman who is not doing too well, the supervisor can point out the fact that other salesmen are finding success from one main type of attack, such as the canvass, and encourage the salesman who was having difficulty in closing sales to use the method that is bringing results.

These record sheets have enabled the James Co. to formulate a more efficient "closed territory" policy, says Burton.

Some time back, the "closed territory" policy was working under a system whereby the salesman was protected on 400 names which he had contacted in his territory and had carded, if he re-contacted these names within 60 days' time.

Prospect System Fallacies

But when the individual sales records compiled into a composite monthly report began to show that 60 per cent of the business was being knocked off within 30 days after the contact had been established, and that many salesmen were making sales on "short time" jobs—wherein somebody became disgruntled about the ice service they were getting, or landed a new job, etc.—the retail sales heads of James & Co. began to see some fallacies in this system.

They began to realize that a man with 400 prospect cards which he would have to re-contact within 60 days would be too burdened down to smoke out new business, the "short time" jobs which usually come about by a salesman happening on the scene just about the time a prospect was all ready to buy refrigeration.

Too much of the salesman's time was devoted to thinking about "protecting" his rights with the 400 prospects which were "rightfully" his, Burton states. The "protected territory" plan was not designed to give the salesman this mental attitude of 'fighting for his rights," in fact, it was supposed to take away this feeling altogether.

To eliminate this type of mental state on the part of the salesman, the plan was revised. Salesmen were given protection up to 200 carded names, with no time limit.

Pick Up 'Live' Business

With only 200 names on which to work, and no fear of an "expiring" time limit after which time they might lose a sale to some other salesman in their own company, the men can now devote a good share of their time picking up the "live" business, and finding the "just ready to buy" type of prospect.

"Business doesn't come from old prospect cards," is one of Burton's 1932 axioms.

The older a prospect card gets, the less valuable it becomes, Burton states. He points out that under present conditions the prospect is less liable to buy as time drags on, as his economic state in the majority of the cases may be a little worse every day.

Contact 'Good' Prospects

"Our force has too little time to be spent on good prospects, to waste effort on prospects definitely out of the question," says Burton.

"The big job in selling today is in 'searching out' buyers," states the retail sales manager for G. E. operations in St. Louis. "The man who is closing sales is the one who is directed to the proper income class, who is using the most effective current method of finding prospects during the current situation, and who keeps a 'hot' prospect file which he contacts not weekly, but daily."

There has been a decided drop-off in display floor selling, which is one of the reasons for the James & Co. concentration on the canvass. Shows, promotional stunts, price leaders, etc., are placed by Burton in the category of advertising.

Selling under present conditions is becoming more than ever a matter of "going out and getting it" and it is up to the sales manager to direct his men to the best of his ability to the sources of possible "live prospects," Burton believes.

Sold on Convenience

While the "economy" argument may be the most *apparent* successful approach for the sale of refrigerators in 1932, Burton believes that people *really* buy refrigeration because of its convenience, and because they can be proud of it in their home.

"The economy argument is the 'blind side' approach to a prospect," Burton points out. "It allows the salesman to talk about something that is apparently very important and valuable, until he can feel the prospect out on possible real motives that would lead him to buy a refrigerator. At the same time the economy argument allows the prospect to justify the expenditure which he is making for a 'convenience.'"

KELVINATOR DISTRIBUTOR EXHIBITS AT BRUSSELS FAIR

BRUSSELS, Belgium—Establishments Pierre Dehaes et Fils, distributor in Belgium for Kelvinator, with headquarters at 41 Rue du Compas, was among the firms exhibiting at the annual Commercial Fair here this spring.

The exhibit included eight models, and the theme of the placards which were a part of the decoration was: "The health of your children safeguarded by Kelvinator."

An indirect lighting effect caused the large cut-out letters, "Kelvinator," to stand out.

NORGE DISTRIBUTOR HOLDS 2 RALLIES IN TENNESSEE

NASHVILLE, Tenn.—Two Norge rallies, one in Nashville and the other in Memphis, were held by Gambill Distributing Corp. to usher in the Norge Extra Power sales contest in the Tennessee territory.

More than 150 Norge dealers attended the meetings, which were addressed by M. G. O'Harra, eastern sales manager; James A. Sterling, sales promotion manager; T. P. Hallock, divisional sales manager, and E. Gothberg, of the Norge service department.

Other speakers were A. W. Seiler, vice president of Cramer Krasselt Co., Norge advertising counsellor, and Wheless Gambill, Jr., of the distributing organization, who presided at both meetings.

Aged Seamen's Home Buys G. E. Units

STATEN ISLAND, N. Y.—General Electric refrigerators have been installed in the famous home for aged seamen, Snug Harbor, on the banks of the Kill von Kull, a part of New York Harbor.

This institution, which has cared for more than 6,000 seamen, was founded by Robert Richard Randall. Five special cabinets, six D-55 units, two S-42s, one S-67, and one SS-82 were installed.

APEX USES TOY MODEL AS SALES PREMIUM

CLEVELAND—A toy Apex refrigerator measuring 24 in. in height is now being used as a premium by Apex refrigerator outlets.

The toy is made of steel and is finished with white lacquer. It has two steel shelves, a toy cooling compartment, and two ice trays. It has no utility.

R. COOPER, JR., SETS RECORD IN RANGE SALES

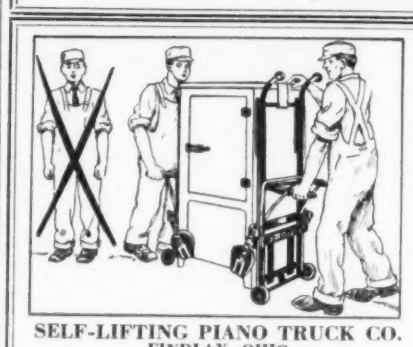
CHICAGO—The largest month so far in the distribution of electric ranges was had in June by R. Cooper, Jr., distributor of General Electric refrigerators, Hotpoint ranges, and General Electric dishwashers.

The month of June showed a 183 per cent increase in orders secured for Hotpoint ranges over the record for May.

BUYER'S GUIDE

Manufacturers Specializing in Service to the Refrigeration Industry

SPECIAL ADVERTISING RATE (this column only)—$12.00 per space.
Payment is required monthly in advance to obtain this special low rate.
Minimum Contract for this column—13 insertions in consecutive issues.
All advertisements set in uniform style of type with standard border.
Halftone engravings of 100-line screen, either outline or square finish.
No reverse cuts or heavy black effects. No charge for composition.



SELF-LIFTING PIANO TRUCK CO.
FINDLAY, OHIO

Save one man on delivery. Make heavy lifting easy—quick. Eliminate damage to cabinets—floors—walls.

X-70 REFRIGERATOR TRUCKS
Fit all cabinets, with or without legs, or in the crate. Capacity, 1,200 lbs. All steel frame, 4" rubber tired wheels, one truck with top casters and handles for tilting and rolling into delivery truck and on the stairs. Only pads touch cabinet. Last a lifetime. Complete set $34.50. Ball bearing swivel casters on one end, $5 extra.

X-60 REFRIGERATOR TRUCKS
Handle leg cabinets only. Per set, $31.50. Spring steel hooks to convert into X-70 available separately. Ball bearing swivel casters on one truck, $5 extra.

FINDLAY REFRIGERATOR TRUCKS
For leg cabinets only—padded steel frames—4" rubber tired wheels. Per set, $18.00.

Manufacturers of Trucks for 32 Years

MELCHIOR ARMSTRONG DESSAU CO. NEW YORK

We can take care of your entire requirements of

MELCO BRAND

Refrigeration Parts and Supplies

Stocks at
116 Broad St., New York, N.Y. 523 Arch St., Phila., Pa.

Melchior, Armstrong, Dessau Co.

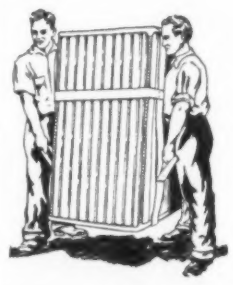
Delivery--Warehousing Service

We are specialists in warehousing, delivering and installing all types of Domestic and Commercial Refrigerators.

Our Warehouse is Fireproof, steam heated and protected by sprinkler system. We have our own Railroad Sidings.

Rates Are Nominal
Correspondence and Inspection Invited

M. & L. CO.
177 Pacific Street, Brooklyn, N. Y.
168 E. 33rd St. New York City. 711 E. 139th St.



Specially designed
REFRIGERATOR COVER and CARRYING HARNESS

Form-fitting covers made of canvas outside—moleskin lining inside—with thin felt filling, firmly stitched. Impossible to rip. The "E-Z" Lift web harness eliminates strained backs and delivers the heaviest refrigerator with a minimum of effort. Easy grip.

Web Harness—$7.00 Complete
Covers—$8.00, $10.00 and $12.00

America's largest pad manufacturers

NEW HAVEN QUILT & PAD CO.
80-86 Franklin St., New Haven, Conn.

TO THE CANADIAN TRADE

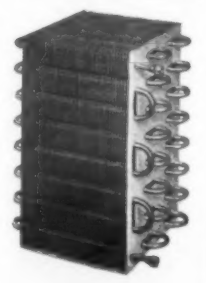
You can get quicker delivery at lower cost by ordering from us

We carry in Stock

COMPRESSORS—COMPRESSOR UNITS—NON-FROSTING COMMERCIAL COILS—BOILER TYPE COILS—COPPER TUBING—FLARE AND SOLDERING FITTINGS—THERMOSTAT AND PRESSURE CONTROLS—DEHYDRATED OIL—AND MANY OTHER PARTS.

THE ARCTIC ICE & FUEL CO., LIMITED
Winnipeg, Man.

A NEW FIN COIL *by* PEERLESS



Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.,—aluminum tubing for ammonia.
Absolute Metal to Metal Contact.
A Superior Coil in which Soldered Return Bends have been eliminated.
Priced to meet 1932 conditions.
Write—Wire for Catalog.

PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.

HOUSEHOLD ELECTRIC REFRIGERATOR SPECIFICATIONS

Detailed specifications for 342 models made by 49 different manufacturers are tabulated in the June 29, 1932, issue of ELECTRIC REFRIGERATION NEWS.

Send $1.00 for 17 weeks trial subscription and specify term to start with June 29 issue. A limited number of extra copies are now available.

Electric Refrigeration News, 550 Maccabees Bldg., Detroit

PLAN ELECTRIFICATION OF REPUBLIC OF ARMENIA

ERIVAN, Armenia—Widespread electrification of the Soviet Republic of Armenia has been decided upon as one of the leading accomplishments of the second five-year plan, states an International News Service correspondent in this city.

According to plans, Armenia in 1937 will have electric power measuring 584,000 kilowatts. This current production means 2,700,000,000 k. w. h. per year, Soviet engineers estimate.

All bath houses, bakeries, factory kitchens, laundries and workshops will be run by electricity. Industry is to be completely electrified. Large apartment houses, yet to be built, will be not only lighted but heated by electricity.

Both interurban and main-line railroads will run on electricity. Per capita consumption of electricity in Armenia will increase from 28 k. w. h. per year to 483 k. w. h. in 1937, it has been estimated.

KAAR SELLS 338 PER CENT OF QUOTA IN DRIVE

CHICAGO—Salesman Sam Kaar of the R. Cooper, Jr., General Electric refrigerator organization, sold 338 per cent of his quota during the recent Monitor Top War Campaign.

Mr. Kaar was the leading "trooper" in the Cooper field army, while the leading commissioned officer was H. F. Arnold.

In the retail department of R. Cooper, Jr., Inc., Will Snyder, sales director, accomplished 132 per cent of quota, and E. E. White, sales director, 106 per cent. High salesman was B. J. Kellogg, who secured 258 per cent of quota during the contest.

6,000 Pennies Used as Down Payment

HAMMOND, Ind.—Six thousand pennies were given as a down payment on a Copeland commercial unit by Mrs. Behn, who conducts a delicatessen here.

Mrs. Behn had made it a practice to save odd pennies for the purpose of buying electric refrigeration equipment.

The Tri-City Electric Co. made a window display of a Copeland with the 6,000 pennies stacked in front of it.

KELVINATOR DISTRIBUTOR ADDS FOUR MEN TO STAFF

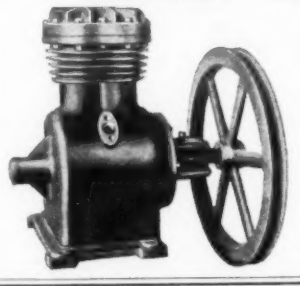
NEW BRITAIN, Conn.—Four new men have been placed in the wholesale department of Rackliffe Bros. Co., Inc., Park and Bigelow Sts., Kelvinator distributor here.

M. L. Hagle will have charge of city dealers in New Britain, Conn., Hartford, Conn., Springfield, Mass., Holyoke, Mass., and Worcester, Mass.; L. H. Webber of northern Connecticut, southern and western Massachusetts; J. H. Verba of the balance of Connecticut, and A. P. Sisson of eastern and northern Massachusetts.

FRIGIDAIRE TO INSTALL EQUIPMENT ON LINER

PHILADELPHIA—The S. S. *Manhattan,* largest liner ever built in the United States, will have Frigidaire ice cream cabinets and other equipment, according to J. J. Pocock, Inc., local Frigidaire distributor.

BARE COMPRESSORS



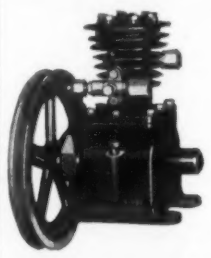
New 1/6 H. P. Twin 1¼" x 1¼"

For Sulphur Dioxide or Methyl Chloride

Other Sizes 1/6 H. P. to 50 H. P.

H. C. PARKER, LTD.

2600 Santa Fe Ave. (Factory), Los Angeles, California
392 Clifton Ave., Newark, N. J.
510 Larkin St., San Francisco, Calif.
734 M. & M. Bldg., Houston, Tex.
237 Roosevelt Bldg., St. Louis, Mo.
37 W. Van Buren St., Chicago, Illinois



A Highly Effective Engineering Service

Brunner renders an engineering service to Manufacturers and Assemblers of electric refrigeration that has proved highly effective in equipment performance—in production economy. It will pay you to investigate the complete Brunner story. Refrigeration Division, Brunner Manufacturing Co., Utica, N. Y.

HIGH SIDES and COMPRESSORS by BRUNNER

COMBINATION SUBSCRIPTION RATES

How to save money on your subscription order

NO.	PUBLICATIONS	YOU PAY	YOU SAVE
1	Electric Refrigeration News (1 Year) and Refrigeration Directory and Market Data Book	$4.00	$1.00
2	Electric Refrigeration News (2 Years) and Refrigeration Directory and Market Data Book	$6.00	$2.00
3	Refrigerated Food News (1 Year) and Refrigeration Directory and Market Data Book	$2.00	$1.00
4	Refrigerated Food News (1 Year) and Electric Refrigeration News (1 Year)	$3.50	$ .50
5	Refrigeration Directory and Market Data Book and Electric Refrigeration News (1 Year) and Refrigerated Food News (1 Year)	$4.50	$1.50
6	Refrigeration Directory and Market Data Book and Electric Refrigeration News (17 Weeks)	$2.00	$1.00

Order by number. Use coupon below. These rates for U. S. only.

Group Order Rates for U.S. and Foreign Countries

PUBLICATIONS	NUMBER	UNITED STATES*	CANADA†	ALL OTHER COUNTRIES
Electric Refrigeration News	1 subscription	$3.00	$6.00	$4.00 These foreign
	5 or more, each...	2.75	5.75	3.75 rates will
	10 or more, each...	2.50	5.50	3.50 be increased
	20 or more, each...	2.25	5.25	3.25 on or before
	50 or more, each...	2.00	5.00	3.00 Jan. 1, 1933.
Refrigerated Food News	1 subscription	$1.00	$2.00	$1.50 These foreign
	5 or more, each...	.95	1.95	1.45 rates will
	10 or more, each...	.90	1.90	1.40 be increased
	20 or more, each...	.85	1.85	1.35 on or before
	50 or more, each...	.80	1.80	1.30 Jan. 1, 1933.
BOTH PAPERS	1 subscription	$3.50	$7.00	$5.00 These foreign
	5 or more, each...	3.25	6.75	4.75 rates will
	10 or more, each...	3.00	6.50	4.50 be increased
	20 or more, each...	2.75	6.25	4.25 on or before
	50 or more, each...	2.50	6.00	4.00 Jan. 1, 1933.

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☐ Enter subscription to Refrigerated Food News ☐ 1 Year $1.00. ☐ 2 Years $1.50.
☐ Send 1932 Refrigeration Directory and Market Data Book. $2.00 per copy.

Name .....
Address .....
City ..... State.....

7-13-32

REQUESTS FOR INFORMATION

Please refer to the 1932 Refrigeration Directory and Market Data Book for a complete list of all manufacturers of refrigeration equipment, parts, materials, supplies and accessories; also for all available statistical data on sales of refrigeration equipment, distribution methods, etc.

To obtain a copy of this book send $2.00 to Business News Pub. Co., 550 Maccabees Bldg., Detroit, Mich.

Advertisers will be given preference in published answers to requests for buyer's guide service, but a complete list of all known suppliers will be mailed if stamped, self-addressed envelope is enclosed with inquiry.

Readers who can be of assistance in furnishing correct answers to inquiries, or who can supply additional information, are invited to address Electric Refrigeration News, mentioning query number.

Utilities Engineering Institute

Query No. 857—"Please advise us what you know about the Utilities Engineering Institute, 404 North Wells St., Chicago."

Answer—This school is one of the well known schools specializing in refrigeration training, and is doing a progressive work in training men for the service and installation fields.

Water-Cooled Condenser

Query No. 858—"We are wondering if you can tell us where we might obtain a certain kind of condenser. It should be for a water-cooled job, and have a provision for the gas to go through one side and water to go through similar tubing adjoining the other side. In the condenser we have in mind, we understand that where the two tubes lie together they are flattened out and each forms the shape of the letter 'D'."

Answer—Page 217 of the 1932 Refrigeration Directory and Market Data Book lists about 20 manufacturers of water-cooled condensers, but we have no information about a condenser such as you describe.

Small Ice Cream Freezer

Query No. 859—"Can you give us any information as to where one might get a small ice cream freezer to be used in a small road stand? We desire a freezer which would freeze the cream very quickly."

Answer—We suggest that you request information from: Taylor Freezer Corp., Beloit, Wis.; Grand Rapids Store Equipment Corp., 1545 Madison Ave., Grand Rapids, Mich.; Mills Novelty Co., 4100 Fullerton Ave., Chicago. A complete list of such manufacturers appears on page 257 of the 1932 Refrigeration Directory and Market Data Book.

Five Per Cent Tax

Query No. 860—"The writer wishes to inquire where he can get authority on the 5 per cent tax applying to our case. If we ship cabinets direct to the merchants, furniture stores, department stores or jobbers, is there tax on cabinets? Who pays the tax on the cabinets?"

Answer—We refer you to the June 29 issue of Electric Refrigeration News, containing a detailed interpretation of the new 5 per cent tax on mechanical refrigerators (pages 1, 2, 10, and 14).

Parts and Supplies

Query No. 861—"Could you give us the names of concerns that carry parts for different makes of refrigeration equipment, such as Kelvinator, Frigidaire, Copeland, Servel, and units such as used in the Gibson and Sparton machines? We are interested in a concern that is independent of any one manufacturer, but which carries parts for all makes."

Answer—A complete list of suppliers of replacement parts for refrigerators may be found on page 341 of the 1932 Refrigeration Directory and Market Data Book.

REFRIGERATION FEATURED IN ENGLISH EXHIBIT

LONDON, England—For the first time in history, the refrigeration section was given a site right in the center of the Grand Hall at the 1932 Ideal Homes Exhibition, the most important national home show held in England.

The refrigeration section this year occupied more than 5,000 sq. ft. of floor space. The entire exhibit covered 12 acres of floor space.

The Frigidaire booth occupied two spaces in the shadow of the Pylon of Light, which raised itself 80 ft. above the grand staircase.

KELVINATOR EQUIPMENT ORDERED FOR HOSPITAL

NEW BRITAIN, Conn.—The contract for refrigeration equipment for the new Worcester County Tuberculosis Hospital, West Boyleston, Conn., has been awarded to Rackliffe Bros. Co., Inc., Kelvinator distributor with headquarters here.

The installation, which will not be completed for two or three months, is being supervised by A. Bamford, service manager for the company.

ASSOCIATION TO SHOW PUBLIC HEALTH AIDS

LOS ANGELES—The first display of equipment, materials, methods and services for the furtherance of public health ever conducted on the Pacific Coast will be held from Aug. 12 to 18 here. The dates of the display, to be called the Los Angeles County Public Health Exposition, occur during the Olympic Games.

Los Angeles County Tuberculosis and Health Association is sponsoring the exposition, which is expected to draw 100,000 visitors. It will be held in the International Industrial Expositions, Ltd., buildings.

A partial list of commodities which will be displayed shows the following:

Air conditioning apparatus, biologicals, building materials, cleansing equipment and agents, dairy equipment, disinfectants, foods and beverages, food preparation and service equipment, furniture, etc., hospital and dental supplies, hygienic clothing, uniforms, shoes, etc.

Lighting fixtures, laboratory glassware and supplies, laundry supplies and equipment, materials and apparatus (water works engineering and municipal sanitation), milk and milk products, milk sanitation materials and equipment, pharmaceuticals, plumbing fixtures, sanitary apparatus for homes, schools, buildings, sanitary paper products, sewage and garbage disposal, toilet requisites.

Every exhibit entered in the exposition must pass the approval of a technical committee appointed by the Los Angeles County Tuberculosis and Health Association, of which Walter F. Malone is president.

NEW YORK SHOW EXHIBITS MERCHANDISING DEVICES

NEW YORK CITY—The First National Exhibition of Motion Merchandising Devices, mechanisms for the special purpose of putting movement and interest in window displays, is being sponsored by the Mergenthaler Linotype Co. during the month of July, on the eleventh floor of the McGraw-Hill Building, 330 West 42nd St.

Thirty specially designed show windows are a part of the display, each showing an adaptation of Mergenthaler motion devices. Among these is pendulum power unit which may be used to cause mechanical motion in lithographed cardboard cut-outs, silk screen process displays, metal demonstrators, etc.

Other devices are: A showmaster revolving turntable with continuous rotary motion; a revolving merchandiser using the same principle; a mechanical demonstrator.

LEONARD DEALERS GUESTS AT BOSTON GET-TOGETHER

BOSTON—Metropolitan Boston dealers of Howe & Co., eastern Massachusetts distributor of Leonard electric refrigerators, attended a get-together meeting at the distributing headquarters, 841 Boylston St., recently, to hear A. C. Jordan, Leonard sales promotion department, and Glen E. Rogo, district sales manager.

Other speakers at the meeting were Ed Rowan and Lee R. Howe of the distributing organization. A movietone picture, showing the 50 dealers present the Leonard factories at Grand Rapids and Detroit, were shown.

BRIDGE APARTMENTS WILL HAVE FRIGIDAIRES

NEW YORK CITY—The Port of New York Authority, the official New York and New Jersey state board which built the George Washington bridge, has installed Frigidaire equipment in several apartments on the Plaza near the bridge.

These apartments are built upon land which was taken over by this organization in building an approach to the bridge. The organization has built and manages the George Washington Bridge, the Holland Tunnel and the Van Kull Bridge.

REFRIGERATOR ACCESSORIES GIVEN WITH PURCHASE

KANSAS CITY, Mo.—The offer of free refrigerator furnishings valued at $9.35, with the purchase of any Mayflower electric refrigerator of 6 cu. ft. capacity, was made during the month of June by Richards & Conover Hardware Co.

A vegetable pan, water cooler, and three food containers, all of porcelain enamel, were included in the set which is manufactured by Federal Enamel & Stamping Co. The offer was described in a folder which was made available to dealers with their imprint on the cover.

Newspaper advertising also carried the information of the offer.

THE CONDENSER

PAYMENT IN ADVANCE is required for advertising in this column. The following rates apply:

POSITIONS WANTED—Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each. ALL OTHER CLASSIFICATIONS—Fifty words or less, one insertion $3.00, additional words six cents each. Three insertions $8.00, additional words sixteen cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Maccabees Building, Detroit, Mich.

POSITIONS WANTED

REFRIGERATION ENGINEER: Technical Graduate. Six and one-half years experience. Installation service and field engineering. Factory experimental and application engineering of commercial sulphur dioxide and methyl chloride equipment. Also Ammonia plant operation. Box 483.

HIGH GRADE Specialty Man now employed is desirous of making direct factory connection with manufacturer of electric ranges, air conditioners and room coolers for the eastern territory. Correspondence invited with responsible manufacturers who are interested in obtaining distribution of their products through high class jobbers and dealers. Have proven record of past performances. The latest being the successful establishment in a leading position of an unknown refrigerator. Commission arrangement only. Box 484.

SALES ORGANIZER AVAILABLE For MANUFACTURER, PUBLIC UTILITY or DISTRIBUTOR who desires organization and sales in AIR-CONDITIONING, COMMERCIAL and DOMFSTIC REFRIGERATION and similar and allied lines. Technically educated and practical in POWER, LIGHT, HEAT, REFRIGERATION and VENTILATION, and with fifteen years executive sales experience in these fields as district and direct sales management and distributor dealer organization. If you have a sales problem requiring direction and organization, or field distributor dealer contact, I can submit a record of experiences and production that would qualify me for the assignment. Box 485.

SERVICE TRAINING

THE REFRIGERATION industry offers no department more important, no employment more steady, no compensation more certain, no greater opportunities for advancement than SERVICE. Learn in shortest time at most moderate cost. A concise, practical and theoretical course for beginners, advanced service men, supervisors, managers. HERKIMER INSTITUTE OF REFRIGERATION, 1819 Broadway, New York City.

EQUIPMENT FOR SALE

FRIGIDAIRE equipment, 88 F coils, $30.00. 5 TF coils, $15.00. Model C one H. P., Model N ½ H. P. compressors. Write me what you need, shipped inspection allowed. Will buy used Frigidaire equipment and parts any condition. Automatic Refrigeration Service Co., 308 Tenth N. W., Washington, D. C.

FOR SALE—Several hundred high-class electric cabinets suitable for multiple installation to "close out" at a real bargain. Belding Hall Co., Belding, Michigan.

Engineering Consultant Available

Consulting, research, development, sales engineering, production, design, 25 years' experience. Have taken out numerous patents on refrigeration. Have designed, put into production, taken out patents on many of machines now in present use. No job too large or too small. Very best of references furnished.

Frank W. Andrews
Research Division, Island View, O.

150 DEALERS SEE EXHIBIT OF STEWART-WARNER

TOLEDO—Almost 150 dealers gathered here last week to witness a presentation of Stewart-Warner refrigerators and radios, at the invitation of the Stollberg Hardware & Paint Co., distributor.

J. C. Meyers, sales manager of the Stollberg company, presided at the sessions and introduced the following Stewart-Warner officials:

A. B. Dicus, advertising manager, who presented the advertising and display programs for both lines; J. Golten, service department head, discussing radio servicing; R. E. Baldwin, sales manager of the movie equipment division; O. F. Jester, radio sales manager.

COPELAND 'ICE CUBE' CHANGES FORMAT

MT. CLEMENS, Mich.—With its June-July issue, the *Copeland Ice Cube,* house organ of Copeland Products, Inc., changed its format from that of a newspaper to that of a magazine.

First issue of the magazine in its new form offers $5 for the best letters on the question "How I Boost Prospects to the Higher Priced Models." Each month, some important selling question will be considered in this manner, with the prize letters appearing in print.

A "suggestion box" wherein men in the field may write ideas for a better service from the factory, is also incorporated in the new magazine.

GIBSON LEADS AGAIN

A New FULL SIZE 5.4 CU. FT. MODEL at a New LOW PRICE

Here's a refrigerator built for today's needs and today's pocketbooks. A big, roomy cabinet that gives amply food storage space for the average size family.

A standard make, finest quality refrigerator at rock bottom price. One can be proud to own it and proud to show it. It's Gibson quality through and through — Gibson beauty, Gibson features and MONOUNIT power.

Never before has such outstanding value been offered at such a low cost. The New Model SG-54 meets a definite need — the refrigerator America has waited for!

Gibson always leads. It's years ahead of the industry. And it *stays* ahead! June 1932 — — ***1932*** — was the biggest month in the history of the Gibson Corporation.

A Gibson dealer franchise has a steadily increasing value. Get into the picture now. The best part of the season is just ahead. Sweltering, dog days are coming on and there's cold gold waiting for you. Mail the coupon for complete details.

GO PLACES WITH GIBSON!

Tested and Approved by Good Housekeeping Institute — GOOD HOUSEKEEPING MAGAZINE — SERIAL NO. 2503

MODEL SG-54
CABINET SPECIFICATIONS

	Width	Depth	Height
Overall Dimensions	27 5/8″	28 1/8″	51 1/8″
Body	25 7/8″	23″	40 1/8″
Interior	20 7/8″	17″	27 1/4″
Gross Capacity		5.4 Cu. Ft.	
Shelf and Floor Area		9.22 Sq. Ft.	

Sixty-three Ice Cubes
Trays — Three Single Depth

$169.50

F. O. B. FACTORY

CLIP THIS COUPON

Gibson Electric Refrigerator Corp.,
Greenville, Michigan.

Without obligation please give me complete details on Gibson Dealer Franchise.

Name.....

City..... State.....

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WRITTEN TO BE READ ON ARRIVAL

Engineering Section

IN TWO PARTS PART TWO

ELECTRIC REFRIGERATION NEWS

Registered U. S. Patent Office

The business newspaper of the refrigeration industry

VOL. 6, NO. 45, SERIAL NO. 173

Copyright, 1932, by Business News Pub. Co.

DETROIT, MICHIGAN, JULY 13, 1932

Entered as second-class matter Aug. 1, 1927, at Detroit, Mich.

THREE DOLLARS PER YEAR

ILLINOIS CENTRAL CARS AIR COOLED BY WESTINGHOUSE

6-Ton Systems Installed Using 2-Cylinder F-12 Machines

CHICAGO—Newly-designed Westinghouse air conditioning systems, using F-12 (dichlorodifluoromethane) as a refrigerant, were installed last week on 10 dining, lounge, parlor, and chair cars and coaches composing the Illinois Central Railway System's two Daylight Special trains operating between Chicago and St. Louis.

Each of the refrigerating units is rated at 6 tons of refrigeration per 24 hours, and consists of a self-contained high-speed compressor and condenser mounted beneath the car body.

A gear-driven direct current axle generator supplies each car with sufficient power for lighting and battery charging in addition to that needed for operating the air conditioning system. The electrical control is so arranged that it produces constant voltage at any train speed between 20 and 90 miles per hour.

The cooled air is sent through fin-type pipes overhead in the car, and issues from openings in the ceiling surfaces. This equipment may be used during the winter for heating purposes.

On sultry days the air will be dehumidified, while on excessively dry days, a certain amount of moisture will be added to the air.

The condenser and two-cylinder compressor are cooled by air forced across them by a fan on the motor shaft.

Each unit works on direct expansion, without the use of brine or any other intermediary cooling agent.

A manual master switch in the car is used to turn the motor on and off at the beginning and end of the run. With the switch in the "on" position, the operation of the set is entirely automatic, being controlled by a thermostat.

While the train is en route, the motor operates from railway batteries. By a special arrangement, however, the cars may be cooled before a run by plugging the alternating current motor in on the 220 or 440-volt alternating current supply available in the yards. This same operation drives the direct current motor as a generator to charge the battery.

Illinois Central and Pennsylvania trains operating from Chicago to New York City are pre-cooled in Chicago by

(Concluded on Page 3, Column 1)

SENATE OFFICE BUILDING WILL BE COOLED BY YORK

WASHINGTON, D. C.—The new fourth wing of the United States Senate Office Building, now under construction, is to be air conditioned. From the bids submitted, the York Ice Machinery Corp., York, Pa., was awarded the contract for the complete refrigeration and air conditioning system through the George A. Fuller Co., general contractors. The amount of the contract is $150,000.

A complete system of air conditioning for the entire new wing areas, from the first to the third floors inclusive, and provision to extend the system to the basement at some future date, is included in the contract.

Like the installation in the Halls of Congress and the Executive Office Building, the air conditioning system will provide all year round service. On the hottest days of summer, a temperature of 75° and relative humidity of 50% will bring comfort to senators and committeemen in spite of the sweltering heat of Washington's summer days. Over 150,000 cu. ft. of air—washed,

(Concluded on Page 2, Column 3)

BALTIMORE CAFE INSTALLING AIR CONDITIONING

BALTIMORE—The Oriole Cafeteria, located at 22 Light St. here, is installing a complete refrigerating and air conditioning system.

The equipment which will produce dining comfort this summer is being furnished by the York Ice Machinery Corp., York, Pa., and will consist of a York 15-ton air conditioning system using the new refrigerant Freon.

McCord Introduces Overhead Type Air Coolers

DETROIT—A new overhead type of air cooling unit has just been announced by the McCord Radiator & Mfg. Co., manufacturer of evaporators, condensers, and Easy-Out ice cube trays.

The "Convector," as the new air cooler has been termed, is suited for operation with mechanical refrigeration or a cold water system refrigerated by ice, according to the designers. The unit consists of an outer shell, insulated from the chassis frame by cork, and containing a radiator core, a four-blade fan, and a 1-15 hp. Robbins & Myers motor. A brass drain pan under the cooling coil and a copper tube provide for removal of humidity condensed out of the air.

A feature of the design is the use of oval copper tubes for the cooling coils, the air to be cooled being forced across the wide side of the tube. Inlet and

(Concluded on Page 3, Column 5)

CHICAGO PUMP USES ICE IN ROOM COOLER

CHICAGO—The Chicago Pump Co. of this city has just introduced its "Northern-Breeze" room cooler using ice as the cooling medium. Built into an upright cabinet 50 in. high, 30 in. wide, and 22 in. deep, the cooler is mounted on rubber-tired ball bearing wheels so that it can be moved from room to room.

Air is cooled by being forced across a special cooling coil through which ice water is circulated, the announcement states. Warm air from the room is first drawn into the cabinet through an air intake grille in the top of the cabinet, passed across the cooling coil, and forced out through the discharge (also in top of cabinet) out into the room.

A centrifugal blower is operated by a 1/6-hp. motor, both being mounted vertically directly below the intake grille. A bronze pump for circulating the ice water functions below the level of the ice and ice water in the reservoir in the bottom of the cabinet.

The amount of water flowing through the air cooling coil is regulated by

(Concluded on Page 2, Column 2)

ICE-O-MATIC CONVENTIONAL MACHINE NOW ON MARKET

BLOOMINGTON, Ill.—Mechanical details have just been announced on the new low-priced Ice-O-Matic model Y-4 which is now making its appearance in retail outlets of the Williams Oil-O-Matic Heating Corp. Compressors in the new model are installed below the food compartment.

Unlike the regular line of Ice-O-Matic refrigerators, the new model has a conventional non-hermetic type of refrigerating system, with a 1/6-hp. 1750-r.p.m. motor driving a 1-cylinder compressor at a speed of 300 r.p.m. The compressor has a bore of 1 5/16 in., and a stroke of 1½ in.

The condensing unit assembly is rubber-cushioned, while the motor is equipped with a special resilient torque damper to absorb the impact of a high starting torque, according to the announcement. The machine has a 14-lb. cast fly-wheel.

Bearing clearances are .0005 in. and cylinder wall clearances .0008 in., tolerances being maintained to plus or minus .0002 in. The piston is of close grained cast iron, fitted with two rings.

The condenser is built of seamless copper tubing, with fins of corrugated

(Concluded on Page 3, Column 2)

Elmer F. Born Returns From Eastern Tour

GREENVILLE, Mich.—Elmer F. Born, service manager of Gibson Electric Refrigerator Corp., has just returned from a five-weeks trip on which he visited Gibson distributors and dealers in eastern and New England states.

Cities visited by Mr. Born include: Boston; Springfield, Mass.; New Haven, Conn.; Albany, N. Y.; Rochester, N. Y.; Buffalo; Newark; New York City; Baltimore; Philadelphia; Johnstown, Pa., and Pittsburgh.

Mr. Born reported distributor satisfaction with the removable unit service idea which has been carried out by Gibson.

FEDDERS OFFERS ENTIRE LOW-SIDE ON COMMERCIAL

Add Thermostatic Valve to New Non-Frost Evaporators

By John T. Schaefer

BUFFALO—Adding a thermostatic expansion valve to the new Fedders Non-Frost commercial evaporators, the refrigeration division of the Fedders Mfg. Co. is now concentrating sales efforts on the complete low-side assembly for commercial installations, according to W. D. Keefe, sales manager.

Announced about three months ago, the new commercial coils are already selling at a rate which necessitates the newly developed automatic machines for their production, Mr. Keefe reports.

The coils are built in standard sections which can be assembled into evaporators for display cases, combination storage and display cases, market coolers, grocery refrigerators, and restaurant refrigerators. Approximately 400 different combinations can be made up of the available standard units by joining them with the special loops and flared tube fittings.

Fedders engineers are strong advocates of the use of copper in heat transfer devices. Hence the new commercial coils are all copper—from the tubes to the fins to the bond fusing process which holds the fins to the tubes. This process prevents annealing of the copper fins, so their original firmness is maintained, Fedders engineers claim.

The tubes are of ¾-in. o.d. copper with a .035-in. wall, while the fins are of .015-in. copper. The fins are corrugated

(Concluded on Page 2, Column 1)

Permite Being Used In Compressors

CINCINNATI—Aluminum Industries, Inc., of this city has adapted Permite, its aluminum-silicon alloy, to pistons, piston pins, shafts and connecting rods for refrigeration compressors, claiming a weight reduction of 60 per cent for the alloy over similar parts of cast iron.

The alloy parts are heat treated to lengthen their life, and to improve bearing qualities, according to H. J. Beck of Aluminum Industries, and are easily machined. Piston and connecting rod bearings are given a burnished surface.

Piston pins and shafts have a minimum hardness of Rockwell C-60, he states, the seal surface of shafts being given its final lapping operation by the compressor manufacturer.

Cabinet Production

ALBERT JACKS

* * *

CHRYSLER MAN JOINS GIBSON ON CABINET PRODUCTION

GREENVILLE, Mich.—Albert Jacks, formerly of the Chrysler Motor Car Corp., has been appointed superintendent of the cabinet division of the Gibson Electric Refrigerator Corp.

Prior to his experience with Chrysler, Jacks was a divisional superintendent in the Willys-Overland body plant.

Coming Feature

AIR CONDITIONING! That promising field of profit for specialty retail outlets handling electric refrigeration, and of growing importance as a market for refrigerating machines, will be featured in the August 10 issue of Electric Refrigeration News.

Special attention will be given to unit and cabinet types of air conditioners built for offices, homes, stores, etc. which might logically be handled by refrigeration distributors. Both ice and electrically refrigerated systems will be included in the scope of the issue.

The Merchandising Section of that issue will report experiences of refrigeration outlets that have added air conditioning as a companion line, while the Engineering Section will describe the design and performance of new equipment.

In view of the rapidity of developments, and entrance of many new companies into the field, all manufacturers are invited to submit information on their air conditioning products.

B-K MACHINES REACH TO 153° BELOW ZERO

By John T. Schaefer

NEWARK—Engineers of the Brunswick-Kroeschell division of the Carrier Engineering Corp. believe they have reached a "new low" in commercial refrigeration temperatures by the design of a plant which produces –153° F. for a special chemical process used in the manufacture of a synthetic resin.

H. L. Laube, sales manager, points out that this temperature is 80° lower than the coldest temperature recorded by Byrd in his recent expedition to the South Pole.

The installation was engineered and sold by L. M. Church, manager of the Philadelphia office of the company, and A. L. Nugey, Brunswick-Kroeschell engineer in Newark. It follows a similar

(Concluded on Page 2, Column 5)

WHEELER METAL DESIGNS FINNED TUBE CONDENSERS

EAST CLEVELAND, Ohio—A line of continuous finned tube square condensers and spiral condensers of the same construction have been introduced to the electric refrigeration industry by the Wheeler Metal Products Corp., manufacturer of metal stampings.

The copper fins are of the corrugated "zig-zag" type, 1½-in. wide, bent at a ⅜-in. pitch, and fastened to the tubing by solder dipping. All sizes use ⅜-in. o. d. continuous copper tube, according to F. R. Kissling, vice president.

Single-pass square condensers are offered in six sizes ranging from a frontal area of 48.4 sq. in. to 128 sq. in. The largest of eight single-pass, two-row condensers has a frontal area of 168 sq. in., with a total of 33.81 sq. ft. of radiating surface. Double-pass square condensers range from 109 to 221 sq. in. of frontal area, providing from 22.71 to 46.17 sq. ft. of radiating surface.

The spiral condensers are made in both single and double row construction, sizes ranging from the smallest with 57 sq. in. of frontal area and 5.26 sq. ft. of radiating surface, to the largest spiral type with 234 sq. in. of frontal area and 45.76 sq. ft. of total radiating surface.

Kelso Named Manager of Detroit Forging Co.

DETROIT—A. R. Kelso has been named vice president and general manager of the Detroit Forging Co., manufacturers of drop forged crank shafts and connecting rods for refrigeration compressors. Mr. Kelso succeeds E. R. Wegener, resigned, who has been president and general manager of the company for the past 4½ years.

Mr. Kelso comes from the Muskegon (Mich.) plant of the Continental Motors Co., where he was works manager for the past 6 years. For four years prior to that he was master mechanic of the Hudson Motor Car Co.

SIROCCO CABINET TYPE AIR COOLING UNIT ANNOUNCED

American Blower Using Universal Coolers or Ice Tanks

By John T. Schaefer

DETROIT—Adding two new products to last year's central system of air conditioning homes, the American Blower Co. of this city has extended its line to include air conditioners of both unit and central types. This year's new equipment includes four Series "O" Sirocco cabinet-type unit air conditioners, and three sizes of ice melting tanks for refrigerating cooling water to be circulated through air cooling coils.

Both unit and central systems are operative by either mechanical refrigeration, ice-refrigerated water, or city tap water (in those localities where city water temperatures are low enough to give a satisfactory cooling effect). Both systems have provision for home heating in the winter time by connection to existing hot-water heating systems.

Installed prices are somewhat higher for a system using mechanical refrigeration as compared with an ice-cooled system, according to G. C. Polk, chief engineer, although the difference is less than most people think because the installation cost of an ice tank system is higher than for the electric system.

Universal Cooler condensing units are installed when a customer prefers mechanical refrigeration to ice.

The Sirocco unit conditioners vary in capacity from about one ton of refrigeration for the smallest size under most favorable operating conditions, to 6 tons for the largest unit, operating under most favorable conditions.

The cabinets are built with an interior structure containing finned copper tube coils with bronze headers through which the hot or cold water is passed, a small motor-driven Sirocco centrifugal fan above the coil, and a cast iron drip pan for draining moisture condensation to the sewer. The inner casing is made of galvanized iron.

The fan and motor assembly can be lifted right out of the top of the inner casing. Three-speed capacitor or reactance motors are used, with the reactance box mounted on the motor assembly. A three-position switch is mounted on the exterior casing for manual control of motor speed.

An exterior steel shell, finished in a

(Concluded on Page 2, Column 3)

PITTSBURGH STOCK OPENED BY VIRGINIA SMELTING CO.

WEST NORFOLK, Va.—Virginia Smelting Company, makers of "Extra Dry Esotoo," have just completed arrangements with the Kirby Transfer and Storage Co., 2536 Smallman St., Pittsburgh, to carry a stock of sulphur dioxide refrigerant at the latter's establishment.

This stock consists of the standard size cylinders. Each cylinder will be tested after filling and before shipment to the stock in accordance with the regular practice of the Virginia Smelting Co.

Shipments to Pittsburgh territory may still be had direct from the factory when purchasers desire such shipments. The Pittsburgh stock will make it possible to deliver the refrigerant immediately to those in territory adjacent to Pittsburgh, hence purchasers need not await the arrival of factory shipments.

The company now carries stocks in 28 different places throughout the United States, and in foreign countries. Many of these stocks are maintained by agents, who carry a complete line of refrigerants other than Sulphur Dioxide.

W. G. MOELING TO HEAD OFFICE OF CELOTEX IN ST. LOUIS

CHICAGO—Walter G. Moeling, Jr., former manager of the Celotex Co.'s dealer service department, has been appointed manager of the company's St. Louis division. He succeeds J. Z. Hollmann, who recently resigned.

Under the company's plan to centralize its sales control, the Texas sales organization will be supervised hereafter by the St. Louis division.

FEDDERS INTRODUCES COMMERCIAL COILS

(Concluded from Page 1, Column 3)

or fluted to form staggered hexagonal flues which give the cooling air a turbulence as it circulates vertically through the coils.

Fedders' tests show that with tube temperatures well below freezing, heat transfer is fast enough to prevent frosting of either coils or fins.

Another feature of the coils is their silver satin finish which is applied to the exterior by a special electro-tinning process.

After fabrication, the coils are tested with 300 lbs. of air pressure, washed with a cleaning solution, steam-cleaned, air-dried and dehydrated under a vacuum in high-temperature ovens.

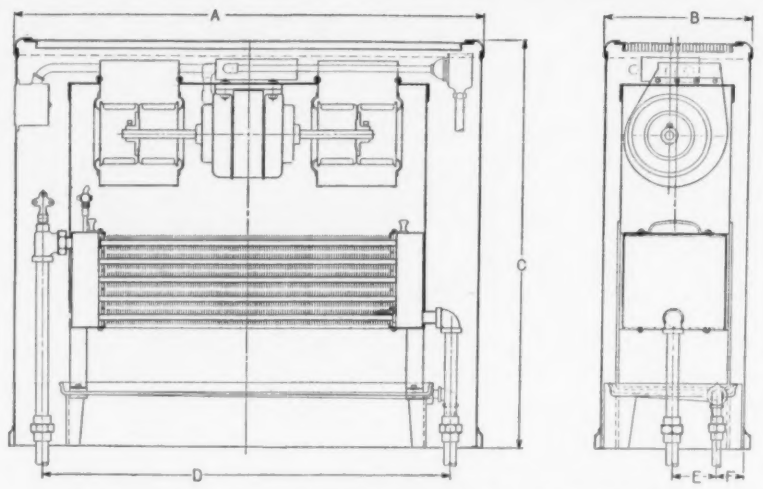
A complete and descriptive catalog incorporating heat loss tables based on sizes and construction of refrigerators to be cooled by Fedders coils are being offered to installation men to help them estimate proper coil selections.

The thermostatic expansion valve now furnished with the commercial evaporators is a combination of the Fedders automatic expansion valve with a thermostatic power element taking the place of the automatic valve's adjusting screw.

The thermostatic bulb is intended to be clamped securely to the suction line so that temperature changes on the low-side will expand or contract the volatile liquid in the power element which controls the valve, to pass more or less refrigerant into the evaporator. Pressure settings are made by turning the adjusting cap.

The Fedders research department is a busy place these days. In it may be seen a new water cooler, bottle beverage coolers, room cooling appliances, and other new products including a special bulk beverage cooler whose announcement is expected within the near future.

Sirocco Unit Air Conditioners



Cross-section of American Blower's cabinet air conditioners.

CHICAGO PUMP CO. USING ICE IN ITS ROOM COOLER

(Concluded from Page 1, Column 2)

means of a control valve operating on the coil.

The large model 300 is designed to hold 300 lbs. of ice which will last from 8 to 15 hours, depending on the temperature and humidity, engineers of the company claim. Model 200, one-third smaller in capacity and dimensions, accommodates 200 lbs of ice. The machine is re-iced through a rear door.

Humidity condensing on the cooling coil is drained through a rubber hose down into the ice water reservoir. The designers claim a cleaning effect as the air passes over the wet coils.

NEW AIR CONDITIONER BY AMERICAN BLOWER

(Concluded from Page 1, Column 5)

grained walnut, is slipped over the top of the mechanical assembly after all installation connections are made, Mr. Polk showed. This feature reduces the chance of marring the exterior finish while the unit is being installed, he explained, because the exterior shell is not put in place until the equipment is ready to operate.

Both incoming and discharged air passes through the grille extending along the length of the cabinet top. In operation, the unit draws in air from the end portions of the grille down between the exterior shell and the interior structure, up through the coils, and discharges the conditioned air by the blowers through the center of the grille.

The reason for designing equipment with this kind of air flow, Mr Polk states, was three-fold:

1. Room air is warmer at the upper level of the unit than at the floor, hence the cooling effect of the coil is somewhat increased because of a greater temperature differential between incoming air and the coil.

2. Air on both sides of the outer shell is at room temperatures, so there is little possibility of condensation collecting on the shell.

3. This type of design permits the removable outer shell.

Table 1 in this column gives dimensions and specifications of the four models of the unit conditioner.

Water cooling equipment, whether ice or mechanical, is remotely installed, Mr. Polk stated, the cooling water being circulated through the air cooling coils and back to the cooler by a centrifugal pump. All cold water lines are insulated.

Whenever possible, ice tanks are installed so that they can be charged with ice from the outside of the building.

With an electric water cooling plant, the thermostat connected to the tank is set to operate the compressor so that the water temperature will be maintained at 38° F.

When more than one unit conditioner is served by the same water cooling equipment, the water valve in the cooling coil header on each unit may be adjusted so that unit carries its proper proportion of the total air cooling load of the air conditioned space.

SENATE OFFICE BUILDING WILL BE COOLED BY YORK

(Concluded from Page 1, Column 1)

cleansed and conditioned—will be circulated within the walls every minute.

Although the system will incorporate automatic control, the occupants of each room will be able to vary conditions at will through individual control to suit their own pleasures or comfort.

Refrigeration equivalent to the melting of 330 tons of ice per day will be installed to cool and dehumidify the air under maximum summer conditions. This refrigeration will be accomplished by two large York compressors of 220 and 110 tons refrigerating capacity, using the new refrigerant dichlorodifluoro-methane (F-12), also known as "Freon."

The installation of the refrigeration and air conditioning equipment will be started immediately and will be ready for operation upon completion of the building in 9 or 10 months, according to present plans.

G. E. and Westinghouse Engineers Describe Motors in Paris Meeting

PARIS, France—P. L. Alger, General Electric Co., and F. D. Newbury, Westinghouse Electric & Mfg. Co., reviewed "The Development of Electrical Machinery in the United States" before the International Electrical Congress here this week, treating among other subjects, American progress in single-phase, fractional horsepower motors such as are used in electric refrigerators. The material dealing with small motors is abstracted below:

Except for railways, the use of single phase motors in the United States is almost entirely confined to machines of 5 hp. rating or less. Enormous numbers of fractional horsepower single phase motors are used, however, some 6,000,000 washing machine motors of 1-6 and ¼ hp. ratings alone having been built during the past 10 years.

Recently, there has been a remarkable increase in the number and diversity of motor driven household and office appliances, motors for refrigerators, oil furnaces, clocks, and various types of ventilating equipment now taking their place in large scale production beside the washing machine, sewing machine, and vacuum cleaner motors.

There are five principal types of single phase motors used in the appliance field, the repulsion-induction, split phase, universal, shaded pole, and non-excited synchronous motors, each being made in quantities of over 500,000 annually.

Only the repulsion-induction type is used in appreciable numbers above 1 hp. rating, and the last two types mentioned are almost exclusively confined to ratings below 1-10 hp. The shaded pole motor, used chiefly for fans, and the universal motor, used chiefly for high speed small power applications such as vacuum cleaners, portable tools, adding machines, drills, etc., have not changed materially in design over the past few years, though various refinements and economies have been made.

New varieties of the other three types have been introduced, however, and their applications have been considerably diversified. An important step in simplifying the application of small motors is now being taken, in the gradual adoption of common mounting dimensions for all types of constant speed motors of a given rating, so that whatever the type of enclosure, the starting characteristics, the operating performance, or the type of power available, a motor of the same limiting dimensions will be obtainable to do the work.

The following table of production of various types of fractional horsepower motors in the United States during 1929, taken from the United States Census reports, is interesting in this connection:

	No. of Motors in Thousands
Automotive Starter Motors	5,003
Split Phase Motors	1,878
Vacuum Cleaners	1,341
Repulsion Induction Motors	1,110
Universal Motors*	934
Motors Under 1/20 Horsepower	820
Fan Motors	773
Direct Current Motors	275
Capacitor and Other Types of a. c. Motors	153
Motors for Vibration and Other Health Devices	133
Total	12,420

*Items 3 and 5 partially duplicate eath other.

The repulsion-induction motor is very generally used on single phase circuits in ratings from ¼ to 5 hp., where high starting torque and low starting current are desired, particularly in the garage and automobile service station field, for driving small air compressors, pumps, lifts, grinders, etc.

Approximately 3,000,000 of these motors have been built in the United States during the past 5 years. Normally, they are designed as repulsion start induction motors with single stator windings, wound armatures, commutators, and short circuited brushes, and with centrifugal mechanisms which automatically short circuit all the commutator bars when about two-thirds speed is attained.

They thus start from rest with about 400% of full load torque and current, accelerate with a torque gradually decreasing to about 175% of normal at two-thirds speed, when the switch operates, and come up to full speed operation as an induction motor with about 200% maximum torque.

Beginning in 1918, various forms of true repulsion induction motors were brought out, having high impedance squirrel cage windings on the rotor, in addition to the commuted winding, and without any centrifugal mechanism. These types normally have higher operating power factors and greater inertia-load starting ability than the repulsion start type. They are also adaptable for reversing service by the addition of an auxiliary stator winding.

The weight of a standard 1 hp., 60-cycle motor of the repulsion induction type has decreased from about 150 lbs. or more in 1908 to a little under 100 lbs. in 1930.

Where low cost and simplicity are essential, the split phase induction motor is widely used.

A typical ¼ hp., 60-cycle, 110-volt motor of this type has a starting torque of about 250% of normal, a starting current of about 35 amperes, a maximum output of 200% to 250%, and a weight of about 20 lbs.

During the last few years, the central station companies have endeavored to reduce the allowable starting currents of single phase motors to limits of 15 or 20 amperes on 110-volt lighting circuits, and this influence has stimulated the development of new methods of starting the larger sizes of these motors.

Several types of clutch, both mechanical and magnetic, have been brought out, and two or three of them give promise of good success.

Another line of development initiated in 1928 has been the use of an external reactance in series with the main winding of the motor during the starting period, thus increasing the phase split and the allowable current in the starting winding. These reactor motors have met with some favor, as a reduction of about one-third in starting current for a given starting torque is secured at moderate cost.

A third line of development, which promises to be of great future importance, is the use of an external capacitor in series with the auxiliary winding. Such "capacitor motors" were developed more than 20 years ago, but were unsuccessful, chiefly because of inferior capacitor reliability and high cost, until their reintroduction about 1927.

The use of an adequate capacitor enables almost any desired starting current and torque to be obtained, and by a suitable reduction in the voltage across it when the motor attains full speed, the capacitor can advantageously be kept in circuit during normal operation.

The "capacitor start" motor has greatly improved starting characteristics and the "capacitor run" motor has in addition better operating efficiency and power factor and less torque pulsation than other split phase motors, and so the only barrier to their general use is the cost.

Over 250,000 "capacitor run" motors have been applied to electric refrigerators in the past five years, their freedom from noise and radio interference together with their high starting torque and good operating characteristics having given them a preference over other types.

"Permanent split" capacitor motors, in which the same capacitor connection is used for both starting and running, are finding an expanding field in the drive of small fans and blowers, where their freedom from noise and radio interference are important assets, and low starting torque is permissible.

In the application of all of these single phase motors to household appliances, the problem of noise reduction has received increasing attention, and in fact it is often a determining factor in the type of motor to be used. It has now become customary to provide elastic mountings, such as spring or rubber supports to absorb the torque pulsations of these motors, whenever noise is a factor.

Table 1—Specifications of the New Sirocco Unit Type Air Conditioners

Size	Weight	R.P.M. Min.	R.P.M. Normal	R.P.M. Max.	Cu. Ft. Air per Min. Min.	Cu. Ft. Air per Min. Normal	Cu. Ft. Air per Min. Max.	Fan Motor Hp.	Watts Input Max.	Water Inlet Drain Conn.	Dimensions—Inches A	B	C	D	E	F
30	140	1200	1450	1680	120	150	170	1/70	30	½	27	8	26	24 1/16	1¾	2¼
45	230	900	1150	1400	260	330	400	1/30	85	½	34	10½	30	30 1/16	3	2¼
60	370	680	860	1050	475	600	740	1/15	160	¾	42	14	34	36 7/16	4½	2½
75	580	540	680	850	800	1000	1250	1/10	250	¾	48	18	38	43 7/16	5¾	3¼

BRUNSWICK-KROESCHELL UNIT REACHES 153 BELOW

(Concluded from Page 1, Column 4)

job which is now furnishing a temperature of –112° F. The new equipment will have a total overall capacity of 10 tons of refrigeration, according to Mr. Laube.

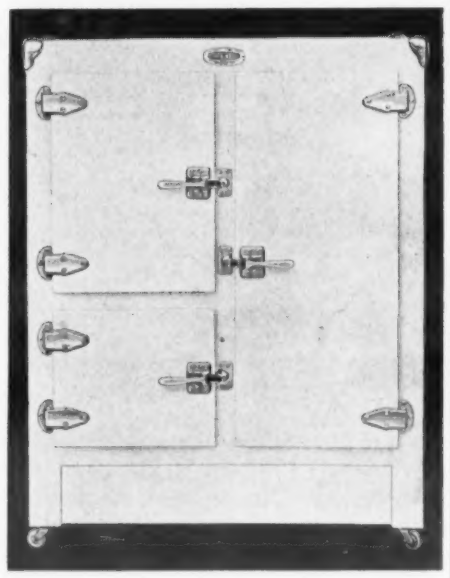
The low temperature is reached by cascading with three stages of refrigeration. The first stage extends from the –153° to –63° F., the second goes from –63° to 28° F., while the third stage operates from 28° to normal condensing water temperatures.

A special hydrocarbon refrigerant is used in the first two stages, with ammonia direct expansion intercooling between them, while the last stage uses ammonia as its refrigerant.

The first stage employs a horizontal double-acting compressor with a 3⅜-in. bore and a 12-in. stroke, while the second stage uses a 4¼x12-in. compressor cylinder. Compression in the last stage is effected by a two-cylinder, single-acting ammonia compressor, stroke: 3½ in., bore: 5 in.

The machine for the first two stages requires about 30 hp., while the last stage uses 15-hp., Mr. Laube stated.

keep the buzzards away...



When a cabinet fails to hold the finish, or corrosion sets in, it is headed for the scrap heap where the vultures of the cabinet industry hold forth. Volume-minded distributors and money-spending consumers will not keep company with a cabinet that fails to hold its own.

Through the widespread adoption of SUPERIOR GALVANNEALED and SUPERIOR SUPER-METAL Steel Sheets, leading manufacturers have brought about a basic improvement in cabinet construction.

These sheets, over a period of six years under every conceivable test, have demonstrated their outstanding superiority where unusual corrosion-producing conditions are present. The zinc coating is not merely *put on*—it is *fused with the base metal* by a patented Heat Treating Process. It will not flake, chip or peel and the surface is adapted to receive paint, lacquer and enamel finishes without preparatory treatment.

Write Now for Booklet—"Convincing Evidence of Advancement"

The Superior Sheet Steel Co.

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Division of Continental Steel Corporation

Manufacturers of: Black, Galvanized, Long-Terne and Special Coated Sheets, Roofing and Kindred Products; Billets, Rods, Wire, Nails and all types of Fence.

- *The zinc coating is fused to the base metal and is highly Rust-Resisting.*
- *The sheets are soft and ductile — coating will not chip, flake or peel.*
- *Surface adapted to receive any finish without preparatory treatment.*
- *Patented Heat Treating Process amalgamates zinc coating with base metal.*

"Superior Super-Metal" PATENTED PROCESS

Superior Galvannealed PATENTED PROCESS

Letters from Readers

Nolde Not Involved In Attack On F-12

Refrigerating Machinery Association
705 Park Bldg., Philadelphia
July 8, 1932.

Editor:

I was very much surprised to see my name prominently displayed in an article published in the Engineering Section of the June 29, 1932, issue of ELECTRIC REFRIGERATION NEWS under the caption, "Engineers Attack Special Privileges for F-12 Refrigerant."

The second paragraph in the article headed "Fremont Wilson Leads Opposition" reads as follows: "It contains exhibits signed by Fred Nolde, Secretary of the Refrigerating Machinery Manufacturers Association," etc.

The third paragraph of this article reads, in part, as follows: "The letter and its exhibits include practically all the material which has been made public by the engineers who are attacking F-12."

The prominence that has been given to this subject in the article in the Engineering Section and also the material presented by George F. Taubeneck in "The Expansion Valve" in the Merchandising Section of the same issue is apt to create a rather serious misunderstanding in the minds of those who may read these articles.

In the first place, the article brings in the name of the Refrigerating Machinery Association, which association has had no part whatsoever in this subject. My name signed to Exhibit 3 was signed as an individual and as a member of the Interpretations Committee.

As you will note from Exhibit 3, the Interpretations Committee had been requested to incorporate in the Safety Code necessary rules for the construction, location and operation of refrigerating machines using dichlorodifluoromethane (F-12) as a refrigerant. This committee felt that it had no authority to incorporate new rules in the ASA Code and that their only authority consisted of interpreting the existing rules. They felt that the incorporation of new rules in the Code was the province of Sectional Committee B-9 which formulated these rules and the only action that the Interpretations Committee could take was to present the available data on F-12 to the Sectional Committee and make certain recommendations for new rules, which Exhibit 3 fully sets forth.

Exhibit 3, to which my name is attached, from my personal point of view cannot in any way be construed as an attack on F-12 and certainly the Refrigerating Machinery Association cannot be brought into the matter as attacking F-12.

The recommendations contained in Exhibit 3 have had the attention of the Sectional Committee and I note in the July, 1932, issue of *"Refrigerating Engineering"* on page 37 there are printed the suggested changes in the ASA Code as made by the Sectional Committee. These suggested changes do not conform in toto with the recommendations of the Interpretations Committee as contained in your Exhibit 3.

In view of the possibility of someone's misinterpreting my own personal opinion in connection with these discussions on F-12 and the further fact that the Refrigerating Machinery Association has been brought into the matter in the articles without sanction and without being connected with the matter at all, I feel that you should publish this letter of mine, giving it as much prominence as has been given to the articles which you published in the June 29 issues of the Engineering and Merchandising sections of ELECTRIC REFRIGERATION NEWS.

FRED NOLDE,
Secretary.

Answer

Mr. Nolde:

It is unfortunate if there may be an interpretation implying that you or your association were active in the opposition to special privileges for the refrigerant F-12. The material published in the Engineering Section of June 29 was presented simply as the evidence used by Fremont Wilson and the several other engineers opposing F-12, to support their arguments.

Our object in introducing the article with the statement that "It contains exhibits signed by—" was to emphasize the fact that the technical data contained in it was collected and cited by Mr. Wilson to support *his* views. Your connection with the Refrigerating Machinery Association was mentioned just as a matter of identification.

Editor.

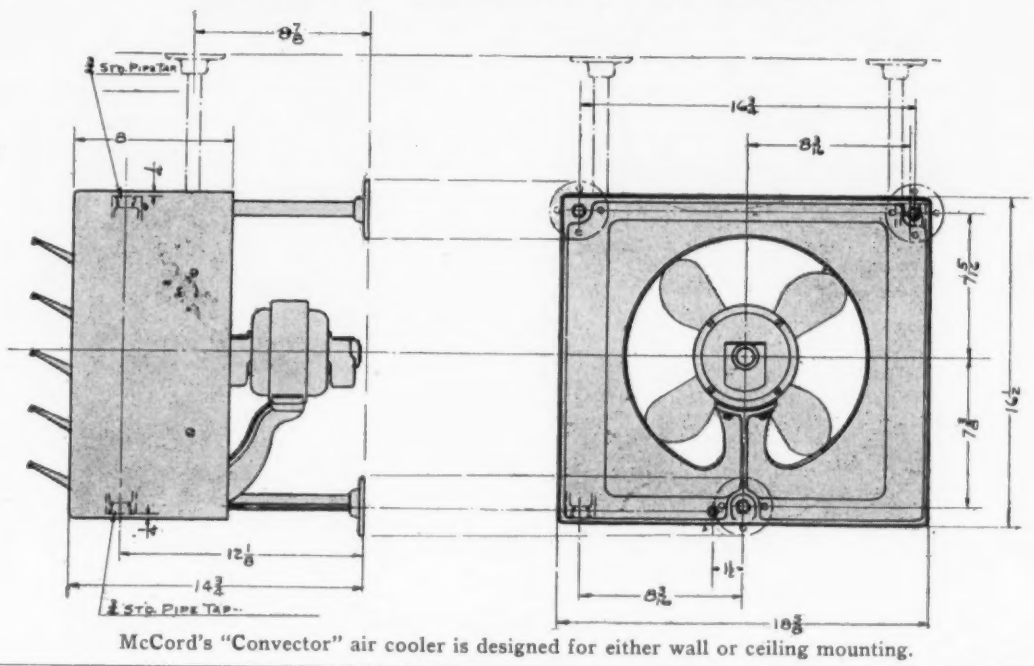
I. C. TRAINS CONDITIONED BY WESTINGHOUSE

(Concluded from Page 1, Column 1)

York equipment using ice. Carrier equipment is used for pre-cooling other Illinois Central trains in St. Louis.

A description of the Carrier pre-cooling equipment appeared in the May 18, 1932, issue of the *Engineering Section* of ELECTRIC REFRIGERATION NEWS.

Details of McCord's Air Cooler



McCord's "Convector" air cooler is designed for either wall or ceiling mounting.

SERVICE HINTS

By FRANK W. GRAY

OCCASIONALLY service men are called upon to repair a job in which a water leak developing in the condenser pipes has flooded the system with water. When such a condition presents itself the service man often finds that the longest way around is the shortest way home—in other words, the quickest and most satisfactory way of handling a job like this is to tear out the entire system, tubing and all, and reinstall it.

The compressor and cooling coils should be cleaned out thoroughly and be baked in an oven before being reinstalled. It is best to discard the old tubing entirely, new tubing being installed in its place.

A job of this type recently came to the writer's attention. A refrigeration agency handling a well-known sulphur dioxide machine received a service call from a large commercial job which had been installed about a year before.

The service man found that the water-cooled condenser had sprung a leak, and that the water had been carried entirely through the system. The compressor was stuck, of course, and all cooling coils defrosted.

The service men removed both compressor and cooling coils from the job, blowing them out and cleaning them thoroughly.

Since the copper tubing was run through a large piece of conduit from the basement to the second story, and was very difficult to pull out because 8 or 10 other tubing lines were manifolded through the same length of conduit, the service men merely blew the tubing out, first with air, and then with refrigerant.

Next the compressor was given a new charge of oil and reinstalled. Within a week another service call came from this job, and the men found that the compressor was again badly stuck, and the coils defrosted. This time the tubing was entirely removed and new tubing installed in its place, while the compressor and coils, of course, had to be cleaned again and re-baked.

When the system was again put into operation it functioned satisfactorily.

It is practically impossible to get all of the moisture out of water-saturated tubing without removing it from the job and baking it thoroughly. Usually the expense and trouble involved in baking the tubing warrant the installation of new tubing instead.

The writer remembers a similar instance in years gone by. An ice cream fountain had been converted to electric refrigeration by the installation of a six-hole brine tank in the fountain, with coils in the back bar and water cooler.

This brine tank had been sealed into the casing of the insulation, and was nearly impossible to get out due to an extremely tight fit.

A water-cooled condenser sprung a leak, and flooded the system with moisture. Every possible expedient was used by the service men to remove this moisture from the system without removing the brine tank. At times the system would operate for a month or more without trouble, giving some indication that the moisture had been removed.

But eventually the trouble was sure to bob up again, and it was finally necessary to reinstall the system, making the service expense much higher than it would have been if the reinstallation had taken place in the beginning.

NEW ICE-O-MATIC

(Concluded from Page 1, Column 2)

tinned brass. The receiver has sufficient capacity to hold all the refrigerant in the system, the designers state.

The cabinet is rated with a gross capacity of 4.29 cu. ft., or a net capacity of 3.8 cu. ft. The shelf area is 7.1 cu. ft.

ALTON LIMITED MAKES TRIP WITH AIR CONDITIONING

CHICAGO—The crack Alton Limited, Baltimore & Ohio express running between Chicago and St. Louis, made its first trip as a completely air conditioned train two weeks ago.

This is the first mid-west train to be completely air conditioned, according to officials of the York Ice Machinery Corp., which firm furnished the refrigerating and air conditioning equipment. It brings the number of Baltimore & Ohio air conditioned cars to 133.

The equipment installed in the train is of the all electric, individual car type, like that furnished to the Columbian, Capitol Limited, and National Limited.

McCORD TECHNICIANS DESIGN UNIT COOLER

(Concluded from Page 1, Column 2)

outlet castings are of bronze, and all water passages are of either brass or copper. The housing and other structural members are of aluminum and cadmium-plated steel.

Cooling coils run horizontally across the unit, and are supported by rows of equi-distant copper vertical fins, slightly corrugated, and bonded to the tubing.

The fan motor can be run at three different speeds by a three-point switch, while the direction of the cooled air can be regulated by changing the position of five adjustable louvers.

When using ice-cooled water as the refrigerating medium, water circulation is accomplished by a centrifugal pump installed in connection with the water cooling tank. The cooling rate can then be varied by regulating the water control valve in the cold water line.

With air entering the unit at 80° F. and 60% relative humidity, McCord engineers estimate the capacity with 40° F. cooling water to be about 120 lbs. of ice meltage per hour when the fan is set at medium speed.

H. L. SMITH IN CALIFORNIA

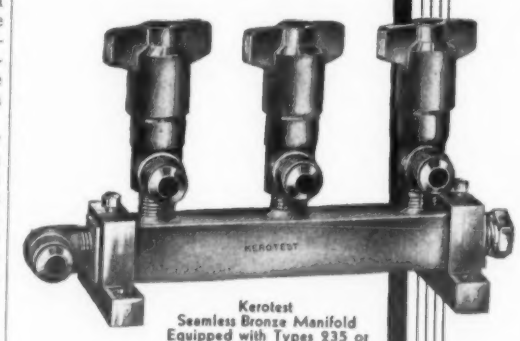
GREENVILLE, Mich.—H. L. Smith, assistant service director for Gibson Electric Refrigerator Corp., is now in California to visit the several new Gibson distributors which have just been appointed by Les Taufenbach, western district manager.

KEROTEST

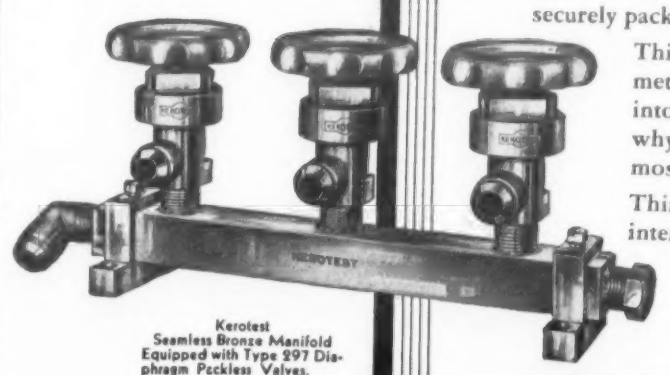
seamless bronze

MANIFOLDS

for trouble-free apartment refrigeration service



Kerotest Seamless Bronze Manifold Equipped with Types 235 or 236 Packed Valves and Wing Nut Seal Cap.



Kerotest Seamless Bronze Manifold Equipped with Type 297 Diaphragm Peckless Valves.

The tubing of all Kerotest Manifolds is made of a special quality of durable bronze, not brass—why there is no danger of splitting a genuine Kerotest Manifold when taper pipe fittings are properly inserted.

Moreover, all fittings are inspected individually to insure smoothly finished seats and proper threads, then individually protected by cardboard ferrules and securely packed in strong iron-banded boxes.

This is a characteristic example of the meticulous care and forethought that goes into every detail of Kerotest manufacture—why you can specify Kerotest with the utmost confidence.

Thirty-five pages of essential information of interest to every refrigerator engineer and service man can be found in the Kerotest catalogue on Refrigerator Valves and Fittings. Send for your copy.

KEROTEST MANUFACTURING CO.
PITTSBURGH, PENNA.

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The Merkel Bros. Co.
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Chase Brass & Copper Co.
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Fernwood.....Mississippi
Enochs Sales Company
Newark, N.J.....Jefferson and Chestnut Streets
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Paramount Electrical Supply Co., Inc.
New York City.....906 Graybar Building
Kerotest Manufacturing Co.
Philadelphia, Pennsylvania.....523 Arch Street
Fretz Brass & Copper Co.
Wilmington.....North Carolina
N. Jacobi Hardware Co.
Minneapolis.....Minnesota
Chase Brass & Copper Co.
Winnipeg, Man., Canada.....156 Bell Avenue
The Arctic Ice & Fuel Co., Limited
Greensboro.....North Carolina
Home Appliance Service Co.
St. Louis, Missouri.....2817 Laclede Avenue
Brass & Copper Sales Co.
San Francisco, Calif.....Merchants Exchange Bldg.
A. W. V. Johnson
Baltimore, Maryland.....108 South Street
Clendenin Bros., Inc.
Decatur.....Illinois
Field & Shorb Co.
Syracuse.....New York
Syracuse Supply Company
Sydney, N. S. W., Australia.....267 Clarence St.
George Brown & Co., Ltd.
EXPORT DISTRIBUTORS
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Melchior, Armstrong, Dessau Co., Inc.

Ault & Wiborg Announce New Lacquer For Refrigerators, Called 'Vichrome'

By C. R. Bragdon, Secretary, Ault & Wiborg Works, Inc., Cincinnati.

DEVELOPMENTS and improvements in materials and methods for finishing electric refrigerators have come with such rapidity lately that printed information has hardly kept up with progress.

Ault & Wiborg refrigerator finishing systems have been designed primarily for use on furniture-steel boxes, but by the use of special types of primer, they may be adapted to other metal surfaces, such as Galvannealed metal, etc.

They are particularly applicable in plants where the primer can be baked at temperatures of 250° F. or over, and it is further advantageous to have facilities for force-drying the lacquer coats. However, by the use of special primers, and with sufficient air-drying time for the finishing lacquer, they may be very successfully used without such baking and force-drying arrangements.

The finish produced under such conditions has good powers of resistance, but the general rule that the toughness and durability of a finish is improved by a baking or force-drying treatment, applies to these materials as to most others.

Primer Is Baked On

Since almost all refrigerator plants at the present time have at least facilities for baking the primer, the Ault & Wiborg systems are found quite universally adaptable.

Two types of primer have been in general use, one of which (known as the No. 17-E type), bakes satisfactorily at 250° F. for 1 hour, while the other (known as the MX), takes a schedule of 300 to 325° F. for 1 to 1¼ hours. In some plants this latter schedule is shortened to about 35 minutes and the temperature correspondingly raised to about 360° F.

Either primer, when reduced according to the directions supplied with it, and baked at its suitable schedule, has firm adhesion to the metal, resistance to humidity, and in one coat, builds up a well-filled foundation. They cover well and bake to a smooth surface of eggshell lustre, and require sanding only when unfavorable shop conditions permit contamination with dust, lint, etc.

Vichrome Described

The finishing coats are of two types; one, the regular No. 115 type lacquer, sold under the trade name, "Aultone," which air-dries ready for packing in a very short time; the other, the new product, "Vichrome," for which a force-drying schedule of 150° F., for 1 hour is recommended, and which, when so handled, produces a finish resembling porcelain in its appearance and general properties.

Both products are supplied in heavy-bodied form, taking a reduction of at least equal parts of thinner for spraying, and it is usual practice to apply two coats, although one good, full coat has been found to produce a well-finished appearance.

The first coat of Vichrome, when two coats are used, should receive a force-dry of about 20 minutes, at 150° F. A feature of importance is the fact that both products can readily be touched up, when necessary, without showing a mark.

This development has been the result of over five years of research devoted to the study and improvement of refrigerator finishes, in the course of which nearly 5,000 panel formulae have been put through several series of tests.

Among these tests are humidity cycles of two or three different kinds; accelerated weathering cycles; tests for flexibility and tensile strength, and for resistance to abrasion, grease, discoloration under light or darkness and under various fume conditions such as sulfur dioxide, ammonia, etc.; and to printing or softening when packed and shipped through warm climatic conditions. All of these tests have been systematically conducted, varying one ingredient, or the proportions of that ingredient, in the primer or lacquer at a time, so that a mass of data has been accumulated.

As above indicated, the chief distinction of the No. 115 type lacquer system is its rapid drying without heat to a hard, tough and flexible film, with durability under conditions above outlined; while Vichrome, with the force-drying treatment, shows brilliant whiteness, lustre, and a resistance to alkaline solutions, to greases and stains of various kinds (such as iodine, blood, inks, etc.), with equal durability.

W. P. HALLSTEIN PROMOTED BY GIBSON

GREENVILLE, Mich.—W. P. Hallstein, Jr., has been advanced to the position of service engineer by the Gibson Electric Refrigeration Corp. here.

Graduating from Purdue University only last year, Hallstein took a laborer's job in the Gibson plant, but was rapidly advanced through different departments in production, inspection and plant layout.

Hallstein was graduated with honors in electrical engineering.

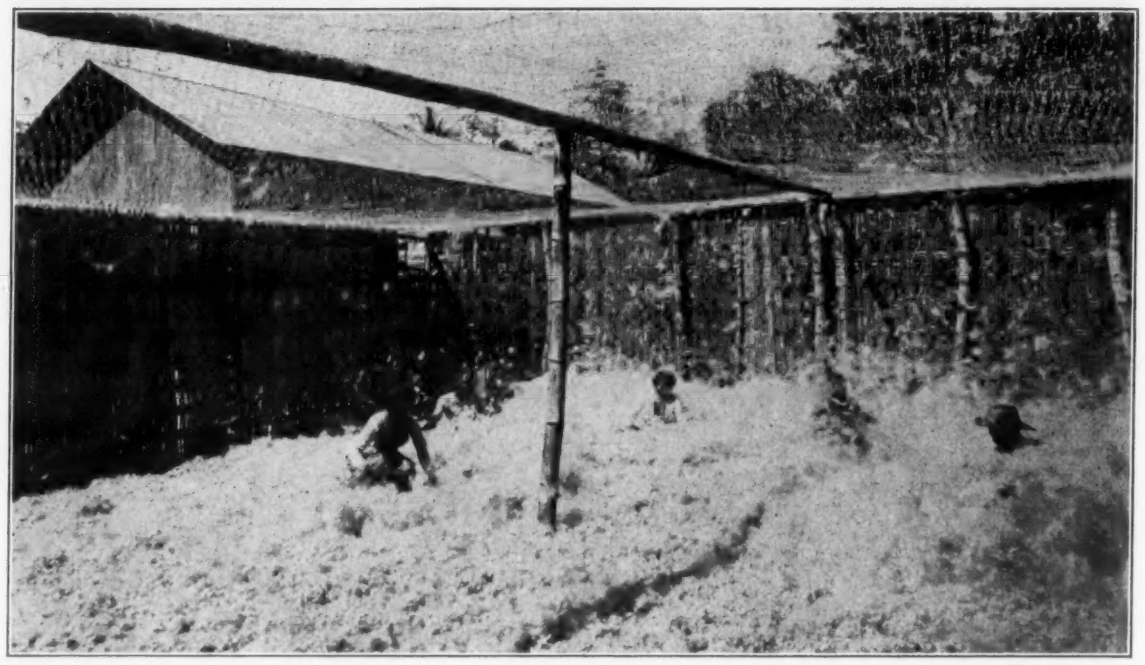
KELVINATOR ELIMINATING RIGHT-HAND DOORS

DETROIT—Elimination of all right-hand single door models from the Kelvinator line has been made effective, according to H. K. Lyons, manager of the order and distribution division.

Hereafter, right-hand single door models will be built on special order only at the time a run of the standard left-hand models is being put through the factory.

The change was made with a view toward reducing the number of models in the line, it was stated.

Curing the Tropical Ceiba Fibre



Natives of the Java islands really make the fur fly in turning over the Ceiba fibre to give it the sun cure.

Ceiba Fibre Pods, the Base of Dry-Zero, Grow on Tall Tropical Trees

By A. L. Clements, Factory Superintendent, Dry-Zero Corp.

A DOZEN years ago Harvey Lindsay, now president of the Dry-Zero Corporation, found within the seed pods of a tropical tree, a raw material he had been seeking for the manufacture of a new type of thermal insulation. Today that insulation is widely known as Dry-Zero, but comparatively little has been told of the interesting story surrounding the seed pod fiber from which it is made.

No queerer trees grow on this earth than the several varieties of tropical Ceiba—sources of Dry-Zero's raw material. At a short distance the Ceiba seems only the skeleton of a real tree. Rising from 30 to 60 ft., its branches are scantily clad with foliage in sharp contrast to the surrounding tropical verdure. The tree's chief purpose seems to be the production of hundreds of fat seed pods, each of which, like the common milkweed pod, is filled with a fluffy white fiber.

Protection to Seeds

In creating the Ceiba fiber, however, Nature worked on unique specifications. For this fiber, unlike all others, is a perfect tube, glassy smooth, closed at both ends and highly resistant to moisture. Nature apparently had two things in mind in designing such a fiber.

The first was the protection of the maturing seeds within the Ceiba pod from sudden changes of temperature. For, despite the fact that the island of Java and other areas where the Ceiba grows hug the equator, such quick drops in the mercury are common, being caused by sharp downpours of rain followed by rapid evaporation. Therefore, Nature made the Ceiba fiber an excellent insulating material.

Fibre Resistant to Moisture

But Nature also intended these fibers to serve another purpose—that of carrying the ripened seed through the air to spots far removed from the parent tree. This is no simple task for frequent tropical showers would dash any ordinary fiber to earth. So nature made the fiber resistant to moisture and extremely resiliant to prevent matting or bunching when dampened.

Because of these peculiar qualities possessed by the Ceiba fiber, it was used for various commercial purposes for a number of years before Mr. Lindsay discovered its high insulating value when subjected to the "graining" process used in the manufacture of Dry-Zero. For many years one of its principal uses has been as filler for life preservers. It is specified for this purpose by the United States Navy.

Big Business in Java

As a result of this varied demand, the business of harvesting the Ceiba fiber crop has become a considerable industry in Java, in fact it is listed as one of the island's "big businesses." The methods of conducting it, however, might not appeal to the average American business man.

There are, to begin with, no Ceiba plantations, groves, or orchards. The trees grow in somewhat haphazard fashion along the island's roadsides, in fields, on native holdings and around many of the coffee plantations, where the trees are planted to form windbreaks to protect the ripening coffee berries.

Ceiba Gathered by Chinese

The gathering of the Ceiba pods is handled almost entirely by Chinese. These men travel into the interior of the island and organize the natives into work groups. These natives scale the tree trunks and knock the seed pods from the branches with long poles.

The pods are gathered into bags and transported on burros to the factories where the fiber is separated from the pods. The natives that do the gathering have never heard of the "gold standard" and demand silver for their labor, making it necessary for the Chinese handling the work to carry a considerable weight of coin on their excursions.

Drying of Fibre

The pods, when delivered, are a mottled brown color, nearly ripe and beginning to split. Natives open the pods and remove as many of the seeds as possible along with the placenta. The fiber is then spread on concrete floors to cure under the rays of the tropical sun. This drying of the fiber takes from two to six weeks, depending upon the weather.

During the curing process, the fiber is turned over by the natives once or twice a day. In doing this, the native worker squats on his haunches, picks up as much fiber as he can, throws it over his shoulder and hunches himself forward with a peculiar duck-like waddle to reach the next batch of fiber.

Fibre Baled for Export

When the Ceiba fiber is cured it is gathered and baled for export. For some reason the fiber exported from Samarang is superior and commands a higher price than that shipped from Sourabaya, the other chief export point.

In the manufacture of Dry-Zero, the fibers of only three of the many varieties of Ceiba tree are used. These are the Ceiba Aeschulipolia, Ceiba Accuminata and Ceiba Pentandra. Fibers from the other trees are considered inferior.

While the Ceiba fiber, in itself, is a good insulant, it does not achieve its maximum efficiency until it has been subjected to the "graining" process used in the manufacture of Dry-Zero. This process causes all the fibers to run in one direction within the insulation slab or blanket. Thus every fiber lies across the line of heat flow and increases the insulation's ability to retard the passage of heat.

Ceiba Pods

Unopened, split, and opened Ceiba pod from which South Sea Islanders remove the seeds preparatory to curing, and manufacture into Dry-Zero insulation.

BIG CAMP IS MODERN WITH REFRIGERATION

LOS ANGELES—At the edge of the desert, 65 miles from Los Angeles, a completely electrified construction camp, with all-electric equipment in a model kitchen, plus electric refrigeration, has been set up to house the 400 workers building $3,000,000 Boquet Canyon dam and storage reservoir for the City of Los Angeles.

Profiting from its previous experience in building other projects, the municipally-owned Bureau of Power and Light decided upon the use of electric current throughout the plant.

The refrigeration installation which has just been completed comprises the following equipment:

3-hp. Servel Unit

A 3 hp. 3-cylinder Servel unit which cools an 8x12x9-ft. walk-in box, maintaining a temperature of 32-36° F. and which operates a water cooler capable of cooling 80 gallons of water in 4-hour intervals from 50 to 70° F.; also an ice-making tank which freezes six 25-lb. blocks of ice every 24 hours. It is possible to freeze these six cans every 12 hours if desired.

The unit is water cooled, operating with a circulating pump and cooling tower. The pumps are directly connected to the motor shaft and operate at motor speed.

Location of Equipment

The walk-in box is located in the north end of the kitchen, while the compressor and ice tank and water cooler are located in the vegetable room adjoining the kitchen.

A ½-in. ice water line is run to the pantry over a service sink with two self-closing faucets for use in drawing ice water. The line is insulated with ice water thickness of cork.

In place of the standard Servel motor, a three-phase Century motor has been used on the cooling unit, which shuts off at 8 lbs. back pressure and starts at 24. The unit is equipped with a Tagliabue high and low pressure control. Methyl chloride is the refrigerant.

Parker System in Nearby Camp

A second construction camp recently completed by the city for the unemployed also utilizes a mechanical refrigeration system which comprises a Parker ammonia plant of ¾-ton capacity, operating from a 2 k. w. Kohler direct current lighting plant. This, however, is to be changed to one of alternating current, controlled by a room thermostat in an 8x12x9-ft. walk-in box. At this camp also a 6-25-lb. can freezing tank operating off the main plant, has been installed.

CARBOLOY PRICES REDUCED BY GENERAL ELECTRIC CO.

SCHENECTADY, N. Y.—Carboloy Company, Inc., a subsidiary of the General Electric Co., has announced a general reduction in the price of Carboloy cemented carbide tools and raw metal. The new price schedule is based upon a sliding scale according to the total weight of Carboloy metal in each individual tool or blank.

Carboloy is a comparatively new alloy developed in the General Electric research laboratory at Schenectady for use as a hard, wear-resistant material for metal cutting purposes.

It attracted wide attention in industrial circles at the time of its introduction in 1928 as the hardest substance ever produced by man—being next to the diamond in hardness.

IT'S PURE

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Always Reliable
Always Economical

Extra Dry ESOTOO, the liquid sulphur dioxide prepared expressly for use in the manufacture and service of electrical refrigerating units is as pure, reliable and uniform as skill, care and experience can make it.
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F. A. Eustis, Sec., 131 State Street, Boston, and 75 West Street, New York

Extra dry ESOTOO

Latest Patents in Electric Refrigeration

ISSUED JUNE 14, 1932

(Continued from Last Issue)

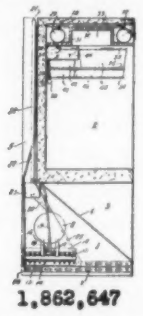
1,862,635. CONTROLLING MECHANISM FOR REFRIGERATING APPARATUS. John R. Replogle, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed Feb. 7, 1927. Serial No. 166,277. 4 Claims. (Cl. 62—4.)

1. The combination with an artificial refrigerating apparatus supplied with power including a refrigerant evaporator of a temperature responsive device for controlling the operation of the apparatus, comprising: an elongated tube disposed within the evaporator and having one end secured to a wall thereof and connected to the power supply for the apparatus, means at the opposite end of the tube for admitting refrigerant from the evaporator to the tube and means for controlling said latter means.

1,862,646. ABSORPTION REFRIGERATING APPARATUS. Edmund E. Allyne, Cleveland Heights, Ohio. Filed Feb. 7, 1929, Serial No. 338,175. Renewed Nov. 14, 1931. 4 Claims. (Cl. 62—118.)

1. In absorption refrigerating apparatus, a cabinet having a refrigerant chamber, a refrigerating storage within and adjacent the top of said refrigerating chamber, a refrigerating unit in liquid gravitating communication with said storage, a housing for said refrigerating unit and comprising a heat absorber forming the upper part of said housing and in heat transfer relation to said storage and to said refrigerating unit, and a heat insulating casing forming the remaining portion of said housing.

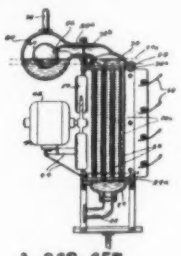
1,862,647. ABSORPTION REFRIGERATING APPARATUS. Edmund E. Allyne, Cleveland Heights, Ohio. Filed Feb. 7, 1929, Serial No. 338,176. Renewed Nov. 14, 1931. 2 Claims. (Cl. 62—118.)



1,862,647

1. Refrigerating apparatus, comprising a cabinet having a refrigerating chamber, an annular evaporator storage on top of said refrigerating chamber, a refrigerating unit in liquid gravitating communication with said storage, and an annular heat insulating housing about said storage providing a central heat collecting dome within the same.

1,862,657. REFRIGERATING SYSTEM AND APPARATUS THEREFOR. Charles H. Breidenthal, Barrington, R. I., assignor to General Fire Extinguisher Co., Providence, R. I., a Corporation of Delaware. Filed March 26, 1930. Serial No. 439,006. 3 Claims. (Cl. 62—126.)



1,862,657

1. Apparatus for a refrigerating system, comprising an evaporator having bottom and top headers and a series of tubes extending vertically therebetween, combined with a casing connected to said bottom header for transfer of liquid refrigerant thereto and connected to said top header for transfer of gaseous refrigerant therefrom: means for supplying liquid refrigerant to said casing; and means connected with the casing above the liquid therein for withdrawing gaseous refrigerant therefrom; there being a nozzle associated with the connection between said top header and casing having its outlet opening downward in said casing whereby any liquid entrained in the gaseous refrigerant passing into said casing is prevented from going on with the gas to said withdrawing means.

1,862,816. REFRIGERATING APPARATUS. Henry P. Braeutigam, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed May 30, 1928. Serial No. 281,604. 5 Claims. (Cl. 62—169.1.)

4. A refrigerator comprising a cabinet and a cooling unit in said cabinet, said cabinet being provided with a plurality of inwardly directed members, front and rear hangers on said cooling unit each provided with two flat horizontal ends, notches at the ends of the rear one of said hangers having a sliding engagement with two of said members, the ends of the front one of said hangers being provided with openings, two of said inwardly directed members passing through said openings and means for locking said ends on said last named members.

1,862,854. REFRIGERATING APPARATUS. Charles F. Henney, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed July 17, 1930. Serial No. 468,555. 4 Claims. (Cl. 62—95.)

1. In a cooling unit for refrigerating apparatus, the combination of a header adapted to contain liquid refrigerant and a floating layer of lubricant, means for regulating the level of the liquid refrigerant, and a looped duct having one end depending from the header and connected thereto to receive liquid refrigerant therefrom and having the other end connected into the header at the liquid refrigerant level.

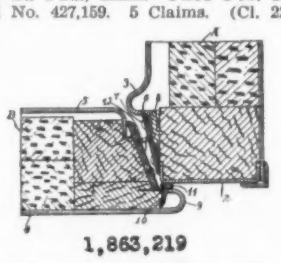
1,862,916. STRAINER FOR MECHANICAL REFRIGERATION. Harry G. Weymouth and Horace Chrisman, Pittsburgh, Pa., assignors to Pittsburgh Equitable Meter Co., Pittsburgh, Pa., a Corporation of Pennsylvania. Filed Feb. 10, 1930. Serial No. 427,330. 2 Claims. (Cl. 210—165.)

1. In a combined drain and strainer for use in the water cooling lines of mechanical refrigeration systems, a cylindrical housing having an open bottom and closed top, the axis of which extends transversely to the direction of flow therethrough; inlet and outlet connections located near the top of the said housing and extending radially therefrom; a substantially cup shaped closure for the open bottom of said housing and a substantially cup shaped screen located within said closure; said closure and screen being in spaced cooperating nested relationship, the upper portion of said housing being reduced in diameter defining a chamber with which said inlet connection communicates, the said reduced portion defining a downwardly facing shoulder or annular seat against which the upper periphery of said screen abuts, the lower edge of the housing defining a downwardly facing annular seat against which the upper edge of said closure seats in sealing relation; and releasable means holding said closure and screen in clamping relation with their respective seats, whereby, when said means are released said closure and screen may be dropped away from said housing for cleaning or other purposes.

1,863,103. COMBINED STRAINER AND REGULATOR FOR GAS REFRIGERATING APPARATUS. Richard G. Dowins, Pittsburgh, Pa., assignor to Pittsburgh Equitable Meter Co., Pittsburgh, Pa., a Corporation of Pennsylvania. Filed Feb 4, 1931. Serial No. 513,438. 2 Claims. (Cl. 210—166.)

1. In a combined pressure regulator and strainer, a housing having an open bottom and closed top; an apertured partition disposed in said housing and dividing the same into high and low pressure chambers; a flexible diaphragm disposed in said housing above said aperture; a pan member operatively associated with said diaphragm; a valve having the stem thereof extending through said aperture and threaded into said pan member; a closure for the bottom of said housing, said closure having a screen disposed therein, the lower edge of said housing defining a downwardly facing seat against which the upper edge of said closure seats in sealing relation, the upper edge of said screen abutting against the lower face of said partition and encompassing said aperture; and releasable means for holding said closure and screen in clamping engagement with their respective seats, whereby when said means are released, said closure and screen may be dropped away from said housing and said valve may be unscrewed and removed from the device for purposes of cleaning or grinding.

1,863,219. REFRIGERATOR. Gebhard C. Bohn, St. Paul, Minn. Filed Feb. 10, 1930. Serial No. 427,159. 5 Claims. (Cl. 220—46.)



1,863,219

1. A refrigerator comprising a body formed with a door opening, enameled sheathing and lining plates for the interior and exterior surface of said body, rubber strips contactingly connecting the lining and sheathing plates of said door body, a door fitted into said door opening, enameled sheathing and lining plates for said door, a metal member secured around the outer door edge and forming a receiving space between it and the adjacent edge of the door sheathing to hold a gasket and a rubber strip contactingly connecting the inner lining of the door with the outer sheathing through said metal member in the outer edge of the door.

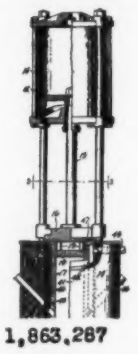
1,863,249. WATER COOLER. Albert F. Morarity, Samuel F. Witten, and Otto Schopp, Phoenix, Ariz. Filed July 31, 1931. Serial No. 557,531. 2 Claims. (Cl. 62—141.)

1. A shelf for refrigerators comprising a coil of tubular material, a water inlet and a water outlet, said outlet being provided with a faucet, the outer convolution of the tubular material being offset at the point where it merges into the second convolution so that the outer end portion will be on a line with the inner end portion of the first convolution.

1,863,263. PROCESS OF AND MEANS FOR PRODUCING SOLID CARBON DIOXIDE. Joseph S. Belt, Amarillo, Tex. Original application filed May 21, 1929, Serial No. 364,890. Divided and this application filed Dec. 27, 1929. Serial No. 416,928. 5 Claims. (Cl. 62—121.)

1. Carbon dioxide snow-forming apparatus, including a snow-forming jet and a separating chamber into one end of which said jet discharges, said separating chamber having a screened top outlet and a discharge pipe for the separated gas escaping through the screen, the other end of said chamber being contracted and forming a restricted oulet for the snow, and means in said chamber for continuously pushing the snow toward said outlet as it forms in said chamber, whereby the snow is protruded in compressed form, said last named means acting to continuously clear the snow from said screen and thereby facilitates the escape of the separated gas.

1,863,287. CARBON DIOXIDE ICE MACHINE. Norman M. Small, Waynesboro, Pa., assignor to Frick Co., Waynesboro, Pa., a Corporation of Pennsylvania. Filed Sept. 21, 1929. Serial No. 394,346. 3 Claims. (Cl. 62—121.)

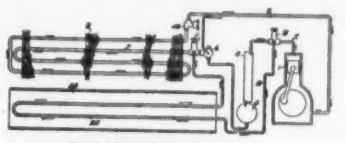


1,863,287

1. A carbon dioxide ice machine comprising a chamber, an expansion nozzle projecting into the chamber, a head held against an end of the chamber, said head having a spaced plate extending within the chamber, a port in said plate, a plunger for closing said port and a piston movable in the other end of the chamber to compress snow in the chamber to compact it into a block of ice said piston serving also as an ejector for the block of ice when the head is removed from the chamber, substantially as set forth.

1,863,427. DEFROSTING REFRIGERATION SYSTEM. Virgil P. Warren, Atlanta, Ga. Filed Jan. 19, 1931. Serial No. 509,809. 4 Claims. (Cl. 62—103.)

1. Defrosting refrigeration circulation system including a compressor and a refrigerating coil, drainage means underlying said coil, said circulation system being divided into parallel branches between the pressure side of said compressor and said coil, one of said branches having a portion arranged in heat exchanging relation to said drainage means, means for selectively determining the path of flow of said refrigerant through one or the other of said branches, and means for compensating the drop in compression pressure incident to the func-



1,863,427

tioning of said refrigerant as a heating medium of said coil and drainage means, for maintaining the heating efficiency of said compressor during the heating period.

1,863,434. COLD STORAGE BOX. William Brown, Ossining, N. Y. Filed Feb. 26, 1931. Serial No. 518,568. 2 Claims. (Cl. 62—46.)

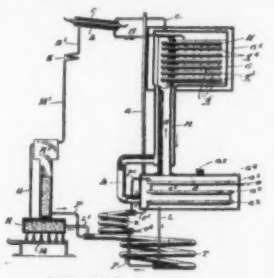
1. A cold storage box including a box structure having an opening, a door for closing said opening, a water resistant container arranged in the box, bars secured to the walls of said box structure positioned above said opening for supporting the container, a pair of brackets secured to two of the walls of said box structure for spacing the container away from the walls of the box, a plurality of platforms arranged at different levels for supporting articles, a drip pan and means for slidably supporting the drip pan opposite said door whereby it may be moved through the door at any time.

1,863,484. STORAGE HOUSE. Charles L. Jones, Pelham, and William L. Kuehnle, Garden City, N. Y., assignors to Dryice Corp. of America, New York, N. Y., a Corporation of Delaware. Filed Nov. 30, 1929. Serial No. 410,747. 28 Claims. (Cl. 62—91.5.)

1. A storage chamber, the walls and bottom of which are insulated and substantially gasproof, a substantially gasproof movable false roof, a skirt extending from the outer edge of said false roof and contacting with said side walls whereby a substantially gasproof seal is provided.

REISSUE

18,494. REFRIGERATION. Donald B. Knight, Brooklyn, N. Y. Original No. 1,748,957, dated March 4, 1930, Serial No. 280,139, filed May 24, 1928. Application for reissue filed April 16, 1931. Serial No. 530,700. 31 Claims. (Cl. 62—179.)



18,494

3. The improvement in the process of refrigerating by the aid of a system including an evaporator and an absorber and open to the influence of atmospheric pressure which consists in diffusing a cooling agent which is in itself of relatively low vapor pressure, without admixture of an absorbent in the presence of an auxiliary agent in the evaporator, and circulating the auxiliary agent through the evaporator and the absorber.

ISSUED JUNE 21, 1932

1,863,576. APPARATUS AND METHOD OF AIR CONDITIONING. Clark T. Morse and Edward L. Hogan, Detroit, Mich., assignors to American Blower Corporation, Detroit, Mich., a Corporation of Delaware. Filed Nov. 22, 1929. Serial No. 408,953. 2 Claims. (Cl. 62—76.)

1. In an apparatus for conditioning air,

(Continued on Page 6, Column 3)

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Make these

4 POINTS OF SUPERIORITY

THE new Minneapolis-Honeywell Refrigeration Temperature Control is designed around new basic principles to give it these four points of superiority: (1) Visible scales both for main range and differential adjustment. (2) Locking provision for both adjustments to prevent tampering. (3) Inherent snap action in new design, heavy duty Con-Tac-Tor Mercury Switch construction, eliminating necessity for complicated tilting mechanism. (4) Simple, rugged, compact, resulting in long life, fewer parts, easy installation and low cost.

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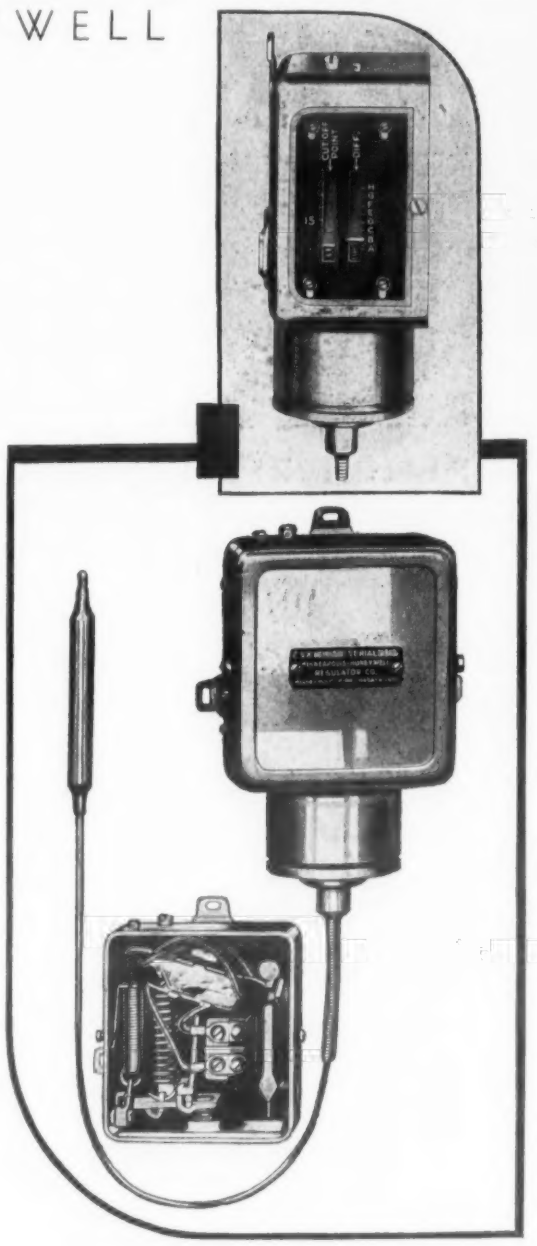
Available in three models with temperature ranges from —50° F. to +50° F. All models have visible scales with locking provision and other features at no extra cost.



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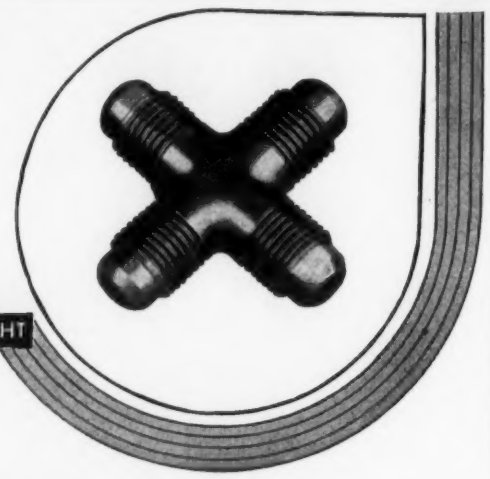
Control Systems



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Every fitting is uniform in regard to material, thread, seat and dimension. Each piece has passed 100 per cent inspection. All tube seats are protected in shipping by cardboard ferrules. Threads are cut to S.A.E No. 2 standards.

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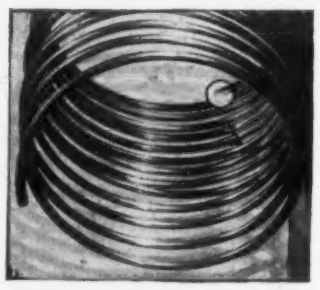

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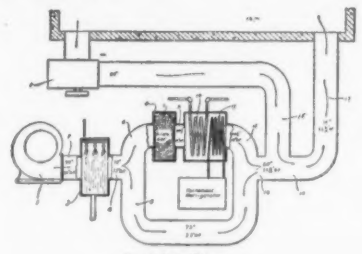
Review of Latest Patents in the

(Continued from Page 5, Column 5)

means formng an air passageway, a container in said passageway containing silica gel for removing at least a portion of the moisture in the air, and a second container in said passageway, said second container having water cooled coils for conducting water of known temperature and adapted to impart one stage of temperature to the air and refrigeration coils for conducting a refrigerant of known temperature content from an independent source than that of said coils first mentioned adapted to impart a second stage of temperature to the air, whereby the temperature of the air is reduced as desired without changing the moisture content of the air as it passes from the silica gel.

1,863,577. APPARATUS AND METHOD OF AIR CONDITIONING. Clark T. Morse and Edward L. Hogan, Detroit, Mich., assignors to American Blower Corporation, Detroit, Mich., a Corporation of Delaware. Filed Nov. 22, 1929. Serial No. 408,954. 9 Claims. (Cl. 62—176.)



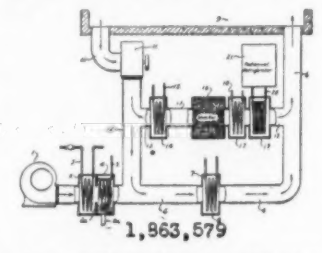
1,863,577

1. In a method of controlling air conditions, standardizing untreated air to a predetermined temperature and dew point, dividing the standardized air into two streams, treating one of said streams of air of predetermined temperature and dew point to reduce the dew point and elevate the temperature, reducing the temperature of said stream without disturbing the dew point and rejoining the two streams.

1,863,578. APPARATUS AND METHOD OF AIR CONDITIONING. Clark T. Morse and Edward L. Hogan, Detroit, Mich., assignors to American Blower Corporation, Detroit, Mich., a Corporation of Delaware. Filed Nov. 22, 1929. Serial No. 408,955. 8 Claims. (Cl. 62—176.)

1. In a method of air conditioning, precooling an air stream, dividing said stream, cooling a portion of the divided stream, precooling the other portion of the divided stream, then dehumidifying the last portion and again cooling the dehumidified portion and reconsolidating the streams.

1,863,579. METHOD AND APPARATUS OF AIR CONDITIONING. Clark T. Morse and Edward L. Hogan, Detroit, Mich., assignors to American Blower Corporation, Detroit, Mich., a Corporation of Delaware. Original application filed Nov. 22, 1929. Serial No. 408,955. Divided and this application filed May 18, 1931. Serial No. 538,035. 9 Claims. (Cl. 62—176.)



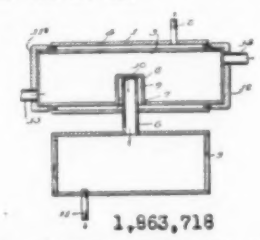
1,863,579

1. In a method of air conditioning, precooling and dehumidifying an incoming air stream, removing from an enclosure a body of recirculation air, delivering a portion of it into the incoming fresh air, dehumidifying and cooling the other portion of it, consolidating the mixed fresh air and recirculation air and the dehumidified cooled air into a common stream, and returning said stream to the original enclosure.

1,863,635. REFRIGERATING APPARATUS. Cassius C. Palmer, New York, N. Y. Filed July 3, 1929. Serial No. 375,674. 4 Claims. (Cl. 62—91.5.)

1. In a refrigerating system, means forming a storage space, a container for solid carbon dioxide, an exhaust pipe through which carbon dioxide gas from the melting dioxide may escape, a motor, means to run said motor by said escaping gas, an air exhaust pipe adjacent the top of said space, a fan operated by said motor and adapted to draw air from the storage space through said air exhaust pipe, and means to discharge said air adjacent the bottom of said space.

1,863,718. REFRIGERATING APPARATUS. Herman W. Kleist, Chicago, Ill., assignor to Dole Refrigerating Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 26, 1926. Serial No. 150,703. 4 Claims. (Cl. 257—28.)



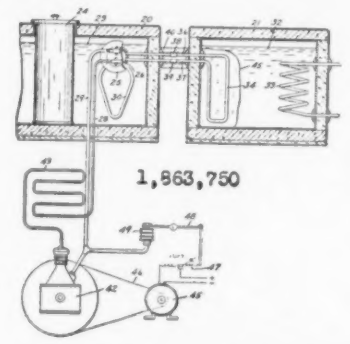
1,863,718

1. A refrigerating apparatus comprising a gas receptacle, a cooling receptacle surrounded by the gas receptacle and separated therefrom by a space into which the gas is received, a refrigerant receptacle, a connection between the refrigerant receptacle and the gas receptacle, said connection having an end which projects into the cooling receptacle, an enclosing device for said projecting end, separated from the projecting end by a space which communicates with the space between the gas receptacle and the cooling receptacle and a plurality of openings connecting the space between the enclosing device and the projecting end of said connection, and the interior of said connection.

1,863,736. RECEPTACLE FOR FROZEN PRODUCTS. William R. Willauer, Philadelphia, Pa., assignor to Marathon Paper Mills Company, Rothschild, Wis., a Corporation of Wisconsin. Filed Feb. 1, 1930. Serial No. 425,228. 7 Claims. (Cl. 62—91.5.)

1. A refrigerating device for frozen products comprising a container having spaced apart side and end walls with a gas space between said spaced walls, a tube for a solidified gaseous refrigerant centrally positioned in said container and extending the full length thereof, said tube and gas space being interconnected whereby said refrigerant when converted to the gaseous state will circulate from said tube into said gas space.

1,863,750. REFRIGERATING SYSTEM. Jesse G. King, Dayton, Ohio, assignor, by mesne assignments, to Frigidaire Corporation, a Corporation of Delaware. Filed July 9, 1925. Serial No. 42,564. 4 Claims. (Cl. 62—95.)



1,863,750

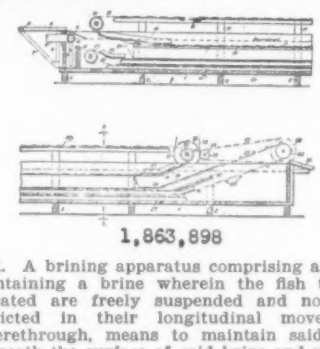
1. Refrigerating apparatus comprising in combination a pair of chambers to be cooled, an evaporator forming a reservoir for liquid refrigerant having a heat exchange means disposed in one of the chambers, means for circulating refrigerant through the evaporator, means for cooling the other chamber including a conduit having both its ends connected with the evaporator and arranged to receive refrigerant therefrom, and means for automatically maintaining the liquid refrigerant at a predetermined level both in the evaporator and the conduit.

1,863,873. METHOD OF MAKING TUBES. Bert L. Quarnstrom, Grosse Pointe Park, Mich., assignor to Bundy Tubing Company, Detroit, Mich., a Corporation of Michigan. Filed July 15, 1929. Serial No. 378,303. 4 Claims. (Cl. 113—33.)

1. The method of making a longitudinally butt seamed torque resisting tube which comprises, moving a strip of stock longitudinally, cutting the edges of the strip while same is moving to form alternating ridges and furrows, bending the tube transversely into hollow cross sectional form, matching the ridges and furrows of the opposed edges, fitting the ridges and furrows together while the strip is moving and then securing the longitudinal seam formed by the interfitting ridges and furrows together by a molten sealing metal.

1,863,886. ICE SCORING MACHINE. John R. Snow, Charlotte, Mich. Filed Dec. 26, 1929. Serial No. 416,535. 13 Claims. (Cl. 125—13.)

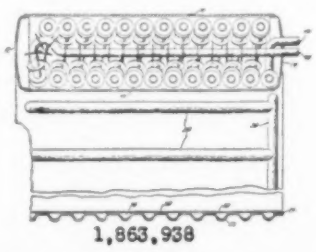
1,863,898. BRINING APPARATUS. Alexander H. Cooke, New York, N. Y., assignor to The Atlantic Coast Fisheries Company, New York, N. Y., a Corporation of Maine. Filed Oct. 31, 1929. Serial No. 403,683. 6 Claims. (Cl. 99—2.)



1,863,898

1. A brining apparatus comprising a tank containing a brine wherein the fish to be treated are freely suspended and not restricted in their longitudinal movement therethrough, means to maintain said fish beneath the surface of said brine and means to supply and withdraw the brine whereby the flow thereof in the tank conveys the fish therethrough.

1,863,938. EVAPORATING UNIT. Russell T. Smith, Greenville, Mich., assignor to Gibson Refrigerator Company, Greenville, Mich., a Corporation of Michigan. Filed Feb. 19, 1931. Serial No. 516,976. 1 Claim. (Cl. 62—95.)



1,863,938

In combination, a pair of relatively nested, U shaped, sheet metal plates secured and sealed to each other on their U shaped edges, a U shaped formations on at least one of the plates, engaging the other substantially on U lines, to provide U passages between the plates from one pair of upper edges to the other pair, a cylindrical tank between the upper edges and secured and engaged by the plates thereat on opposed elements of the cylinder, the tank having openings connecting the interior thereof, with the U passages, the ends of the tank being closed, and a coiled tube within the tank and having an inlet and an outlet projecting through the tank, the interior of the tube being sealed from the interior of the tank and the space between the plates.

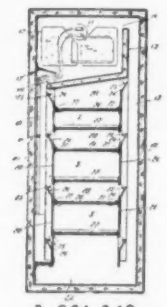
1,864,040. CONTAINER. Philip S. Campbell, Houston, Tex., assignor of one-half to March Culmore, Harris County, Tex. Filed Feb. 1, 1929. Serial No. 336,729. 1 Claim. (Cl. 62—91.5.)

A container having a storage compartment, a cover therefor, said cover having a refrigerant compartment, the bottom of said refrigerant compartment being formed of a perforated metal plate having a wood lining, tubes aligned with the perforations of said plate and depending into the storage compartment, said cover having an outside removable cover plate forming the top of the refrigerant compartment and having vents therethrough.

1,864,068. MANUFACTURE OF CARBON DIOXIDE. Charles L. Jones, Pittsburgh, Pa. Filed Oct. 4, 1928. Serial No. 310,396. 10 Claims. (Cl. 23—150.)

1. In the method of purifying carbon dioxide wherein carbon dioxide gas is absorbed in an absorption chamber by a solution of alkali carbonate to form alkali bicarbonate and the bicarbonate solution is thereafter decomposed, the step which comprises dispersing the hot bicarbonate solution into small particles at a lower pressure than the pressure in the absorption chamber.

1,864,140. REFRIGERATOR. Walter C. Marshall, Milwaukee, Wis. Filed Sept. 10, 1930. Serial No. 480,979. 1 Claim. (Cl. 62—47.)



1,864,140

In a refrigerator of the character described, the combination of a refrigerating unit holding compartment in the top, inner vertical walls of temperature conducting material beneath said compartment arranged in spaced relation with the main side walls of the refrigerator and extending from front to rear of the refrigerator to provide a cold air duct and a warm air duct at opposite sides of the refrigerator, food holding compartments having imperforate bottoms disposed between said vertical walls, and regulable openings in the vertical walls communicating with the upper ends of the food holding compartments, with imperforate cover sheets for each food holding compartment secured to said vertical walls beneath the regulable openings and extending throughout the width and depth of the food holding compartments.

1,864,212. ICE RACK FOR REFRIGERATORS. Fred Ophuls, New York, N. Y., and George K. Nuss, Duluth, Minn., assignors to Duluth Refrigerator Corporation, Duluth, Minn., a Corporation of Minnesota. Filed March 6, 1931. Serial No. 520,512. 7 Claims. (Cl. 62—31.)

1,864,259. REFRIGERATOR CAR AND DETACHABLE UNIT THEREFOR. John D. Small, New York, N. Y., assignor to Dryice Equipment Corporation, New York, N. Y., a Corporation of Delaware. Filed Feb. 21, 1929. Serial No. 341,704. 11 Claims. (Cl. 62—91.5.)

1. A refrigerator car comprising an open or platform freight car having thereon a refrigerator structure comprising a single layer of removable, closely assembled refrigerator units all supported directly on the car platform and occupying substantially the whole load carrying area of the platform, said refrigerator units each extending approximately the full width of said platform and each being approximately cubical, each comprising a gas-tight outer casing of metal having thick inner walls of permeable insulating material enclosing an inner metal container arranged to afford gas circulating interspaces between said permeable insulating walls and said inner container, high level bunkers for solid carbon dioxide outside of said container and discharging gas at a high level for circulation in the interspace between said walls and said container; the upright walls of each being formed with service doors and locking means for the cargo, and its roof provided with an opening for charging the bunkers and with holding devices for hoisting tackle whereby in

(Continued on Page 7, Column 1)

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Development of Refrigeration

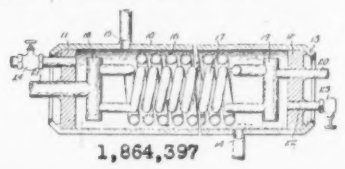
(Continued from Page 6, Column 5)

all transportation and uses it is made difficult to dispose the unit other than right side up.

1,864,396. METHOD AND APPARATUS FOR MANUFACTURING CARBON DIOXIDE ICE FROM LIQUID CARBON DIOXIDE. Frank R. Zumbro, Waynesboro, Pa., assignor to Frick Company, Waynesboro, Pa., a Corporation of Pennsylvania. Filed Oct. 20, 1928. Serial No. 313,887. 5 Claims. (Cl. 62—121.)

1. The combination with a plurality of drums containing liquid carbon dioxide under pressure and a compressor having a low pressure and a high pressure suction port, a condenser, a receiver and a liquid cooler, and means for expanding a portion of the liquid from said drums to cool the liquid carbon dioxide in the said cooler and for delivering the expanded carbon dioxide after its passage through the cooler to the high pressure suction port of the said compressor, and means for expanding the residue of the carbon dioxide from said drums to the low pressure suction port of the said compressor, substantially as set forth.

1,864,397. LIQUID COOLER. Frank R. Zumbro, Waynesboro, Pa., assignor to Frick Company, Waynesboro, Pa., a Corporation of Pennsylvania. Filed Jan. 19, 1929. Serial No. 333,559. 1 Claim. (Cl. 62—115.)



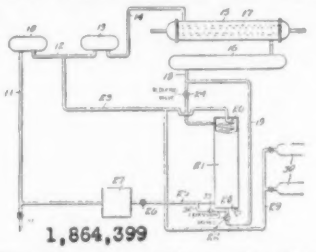
1,864,397

A cooler comprising a casing forming a fluid chamber, inlet and outlet ports to said chamber, a pair of headers in said chamber, said headers being connected by a plurality of nested coils, inlet and outlet pipes connected to said headers, said headers being supported in said casing by said inlet and outlet pipes, and inlet and outlet connections to the interior of said chamber for passing warm fluid through the chamber for thawing out the chamber from time to time, substantially as set forth.

1,864,398. CARBON DIOXIDE SNOW MACHINE. Frank R. Zumbro, Waynesboro, Pa., assignor to Frick Company, Wayneboro, Pa., a Corporation of Pennsylvania. Filed Jan. 19, 1929. Serial No. 333,561. 8 Claims. (Cl. 62—121.)

1. In a snow-making system having means for compressing, cooling and condensing carbon dioxide, a receiver for the condensed carbon dioxide, a liquid cooler, means for delivering carbon dioxide from commercial drums to said cooler, means for expanding the said condensed carbon dioxide from the receiver to cool the carbon dioxide in the cooler and means for subjecting the liquid in the cooler to the pressure in the receiver, substantially as set forth.

1,864,399. METHOD AND MEANS FOR MAKING CARBON DIOXIDE SNOW. Frank R. Zumbro, Waynesboro, Pa., assignor to Frick Company, Waynesboro, Pa., a Corporation of Pennsylvania. Filed Jan. 23, 1929. Serial No. 334,564. 8 Claims. (Cl. 62—121.)

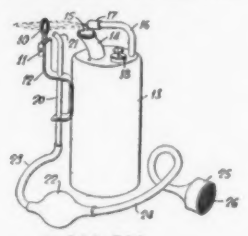


1,864,399

1. The method of making carbon dioxide snow which consists in compressing, cooling and condensing a fluid mixture of carbon dioxide and water, passing a portion of the fluid to a cooling chamber and simultaneously reducing its pressure, expanding another portion of the fluid in heat exchange relation with said cooling chamber to cool the low pressure fluid therein and to freeze out the water content in the said fluid therein, the said freezing action operating to enable the fluid to be expanded at a low pressure through the expansion valve of a snow machine without freezing in the said valve, substantially as set forth.

ISSUED JUNE 28, 1932

1,864,544. DEVICE FOR DETECTING METHYL CHLORIDE. Arthur B. Lamb, Cambridge, Mass. Filed Oct. 1, 1929. Serial No. 396,458. 7 Claims. (Cl. 23—253.)



1,864,544

1. In a device of the character described, the combination with a copper coil, of a portable burner device supporting said coil, means for projecting a jet from said burner through said coil, and means for introducing a gaseous medium at will into said flame, said coil, said device and said means being combined to form a portable structure.

1,864,562. REFRIGERATION. Baltzar Carl von Platen and Carl Georg Munters, Stockholm, Sweden, assignors to Electrolux Servel Corporation, New York, N. Y., a Corporation of Delaware. Filed Jan. 25, 1928, Serial No. 249,357, and in Sweden Feb. 1, 1927. 5 Claims. (Cl. 62—119.5.)

1. Absorption refrigerating apparatus comprising a generator, an absorber, an equalizer vessel, means affording communication between said absorber and said equalizer vessel arranged to permit a constant level of liquid in the absorber independently of variations of liquid level in the equalizer vessel, and means connected with the equalizer vessel for lifting liquid therefrom to above the level of liquid in the absorber and for conveying the liquid so lifted to the generator.

1,864,574. PORTABLE REFRIGERATING CONTAINER. Joseph L. Wood, Atlantic Highlands, N. J., assignor to American Car and Foundry Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 19, 1931. Serial No. 509,596. 10 Claims. (Cl. 62—91.5.)

1. A portable refrigerating device comprising an insulated container having a plurality of superposed trays therein for holding goods to be refrigerated, means for maintaining the trays in spaced relation relative to each other and relative to the walls of the container, and a container for solid carbon dioxide supported by the upper tray in spaced relation thereto and arranged in spaced relation relative to the walls of the container whereby gas evolved from the solid carbon dioxide may permeate the interior of the container to provide an insulating blanket of cold gas around the goods in the trays.

1,864,608. REFRIGERATION. Carl Georg Munters and Sigurd Mattias Backstrom, Stockholm, Sweden, assignors to Platen-Munters Refrigerating System Aktiebolag, Stockholm, Sweden, a Corporation of Sweden. Filed Aug. 1, 1930. Serial No. 472,221, and in Germany Aug. 2, 1929. 30 Claims. (Cl. 62—169.)

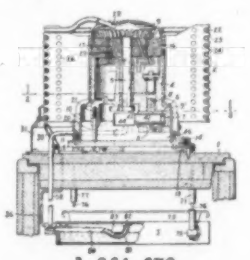
1. The method of refrigerating with the aid of an internal combustion engine which consists in vaporizing a liquid fuel to form a combustible mixture, introducing said mixture into said engine and supplying heat for vaporizing said fuel by conduction from a body to be cooled external to the path of flow of said combustible mixture.

6. Refrigerating apparatus comprising an internal combustion engine, a supply duct for said engine, means for supplying liquid fuel and air to said duct, a body to be cooled external to said duct, and means for conducting heat from said body to the liquid fuel within said duct.

1,864,661. REFRIGERATION METHOD AND APPARATUS. Ernest Baldwin Miller, Baltimore, Md., assignor to Silica Gel Corporation, Baltimore, Md., a Corporation of Maryland. Filed Feb. 26, 1926. Serial No. 90,827. 6 Claims. (Cl. 62—5.)

1. A method of refrigeration consisting in evaporating a liquid, adsorbing the vapor in a porous material, in the absence of permanent gases, activating the adsorbent to liberate the adsorbed vapor, condensing the liberated vapor, returning it to the liquid, and maintaining the system free of permanent gases by sweeping the gases out to the atmosphere during, and by, the activation of the adsorbent.

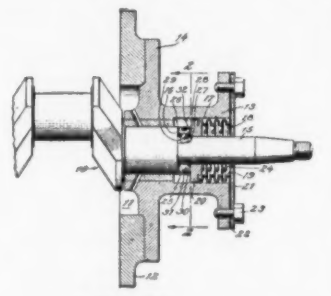
1,864,678. COMPRESSOR FOR REFRIGERATING MACHINES. Christian Steenstrup, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Original application filed May 18, 1926. Serial No. 109,960. Divided and this application filed May 17, 1928. Serial No. 278,589. Renewed Feb. 28, 1931. 28 Claims. (Cl. 230—206.)



1,864,678

1. A compressor comprising a drive shaft, an oscillatable cylinder, a piston therein, and means carried by the shaft and engaged by the piston for operating the same, said piston having a counterweight arranged beyond said means and said shaft having a counterweight arranged opposite said means.

1,864,683. SEAL FOR SHAFTS. John T. Varden, Los Angeles, Calif. Filed Sept. 17, 1929. Serial No. 393,201. 6 Claims. (Cl. 286—11.)



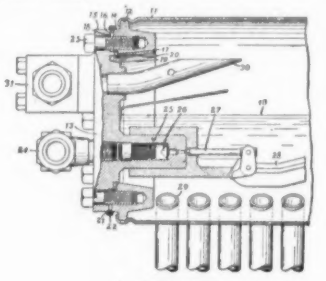
1,864,683

1. In combination, a rotatably mounted shaft having a shoulder thereon, a sealing seat receiving the shaft, a sealing element mounted on the shaft and interposed between said shoulder and seat, means for maintaining the sealing element in sealing engagement with said shoulder and seat, and means for lubricating the contacting surfaces of the sealing element and seat, comprising a peripheral recess in the sealing element, a wick in the recess adapted to be supplied with lubricant, and ducts in the sealing element communicating with the recess and with that surface of the sealing element engaging said seat, through which lubricant from the wick is adapted to be delivered to the contacting surfaces of the sealing element and seat.

1,864,797. PORTABLE HUMIDIFIER. William G. R. Braemer, Haddonfield, N. J., assignor, by mesne assignments, to Airite Corporation, Dover, Del., a Corporation of Delaware. Filed Sept. 1, 1928. Serial No. 303,595. 2 Claims. (Cl. 261—91.)

1. A humidifier comprising a tank having its upper portion provided with an annular diaphragm plate open at its center, a motor supported above the annular diaphragm plate, a horizontal rotatable disc secured to the motor shaft and arranged above the annular diaphragm plate, a centrifugal water pump of tapered cylindrical form axially arranged below the motor and rotated by it and extending through the central aperture of the annular diaphragm plate, fan blades secured in close relation to the under side of the horizontal disc and arranged between it and the annular diaphragm plate and immediately above the central opening therein, stationary dissipating means arranged in annular form about the perimeter of the horizontal disc, and a casing above the tank extending above the disc and dissipator means for directing the humidified currents of air upwardly above the motor, said rotatable disc being secured to the motor shaft by a hub having in its upper surface a deep groove terminating at its top with the rotatable disc and provided at its bottom with a transverse aperture communicating with the interior of the centrifugal pump.

1,864,957. REFRIGERATING APPARATUS. Elmer O. Stout, Dayton, Ohio, assignor to Frigidaire Corporation, Dayton, Ohio, a Corporation of Delaware. Filed March 30, 1929. Serial No. 351,430. 13 Claims. (Cl. 137—104.)



1,864,957

11. An evaporator comprising a tank having an opening, a member bordering said opening, a closure plate for said opening, said member and said plate having substantially cylindrical surfaces of substantially the same diameter adjacent each other, a gasket spacing said member and plate, a flexible annulus normally of less diameter than said cylindrical surfaces placed about the opening between said cylindrical surfaces and sealing the same, and a clamping member about said annulus and compressing said torus into the space between said cylindrical surfaces.

1,865,049. PROCESS FOR PRODUCING FELTED MINERAL WOOL INSULATION. George D. Shaver, Kalamazoo, Mich., assignor to Therminsul Corporation of America, Boston, Mass., a Corporation of Massachusetts. Filed Jan. 7, 1931. Serial No. 507,263. 13 Claims. (Cl. 92—39.)

1. The process of producing mineral wool insulation in sheet form which comprises mixing masses of mineral wool with a relatively large quantity of liquid, agitating the mixture to individualize the wool fibres, to disperse the fibres uniformly throughout the liquid and to maintain the fibres in suspension therein, causing the mixture to flow at a uniform rate sufficiently rapid to maintain the fibres in suspension, and gradually and progressively felting the fibres while held in suspension by the flowing liquid to produce a continuous sheet of substantially uniform thickness.

1,865,135. APPARATUS FOR THE SEPARATION OF GAS MIXTURES. Franz Pollitzer, Grosshesselohe, near Munich, and Heinrich Kahle, Hollriegelskreuth, near Munich, Germany. Original application filed May 24, 1929. Serial No. 365,742. Divided and this application filed March 20, 1931. Serial No. 524,128. 5 Claims. (Cl. 62—122.)

1. Apparatus for separating the constituents of gas mixtures by condensation at low temperatures comprising a plurality of counter-current heat exchangers serially connected through gas and liquid separating devices, means for passing the gas from each of said separating devices to the next serially succeeding heat exchanger, means for returning the liquid from each of said separating devices to at least one preceding heat exchanger, and means for returning the gas from the last of said separating devices to at least one preceding heat exchanger.

1,865,349. REFRIGERATING APPARATUS. Leonard Kay Wright, Jackson Heights, N. Y. Filed Feb. 1, 1928. Serial No. 251,072. 8 Claims. (Cl. 62—5.)

1. A refrigerator comprising a casing having a cooling compartment, a heating compartment, means in the cooling compartment to cool material, adsorbent means in the heating compartment to operate the cooling means, a fuel to heat the adsorbent, means adjacent the cooling compartment on the side most remote from the heating compartment to store the fuel and means to conduct the fuel to the heating compartment.

7. A refrigerator comprising a cooling compartment, a heating compartment, a tank adapted to contain a refrigerant positioned in the cooling compartment, a formation tank positioned opposite the refrigerant tank, a coil about the formation tank communicating with the refrigerant tank and means to vary the pressure in the coil to cool fluids in the formation tank.

(Continued Next Issue)

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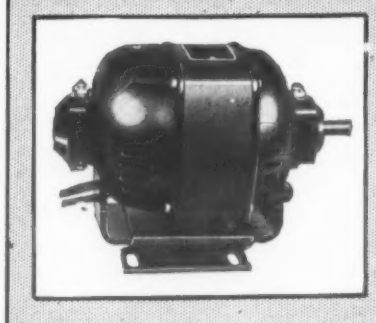

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